745.407
M217
Vol. 1

Maier

The Foundation Program at the School of Design
Basel, Switzerland

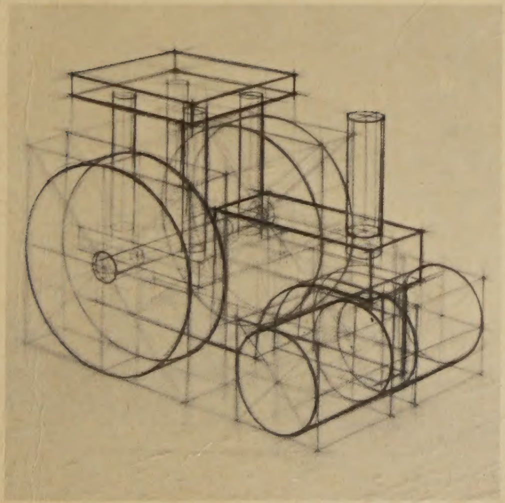
1

Basic Principles of Design

Van Nostrand/
Reinhold

Volume
1

Object Drawing
Object and Museum Drawing
Nature Drawing



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School of Design Basel, Switzerland

Foundation Program

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Manfred Maier

The Foundation Program at the School of Design
Basel, Switzerland

Basic Principles of Design

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Volume 1
- Object Drawing
- Object and Museum Drawing
- Nature Drawing

Volume 2
- Memory Drawing
- Technical Drawing and Perspective
- Lettering

Volume 3
- Material Studies
- Textile Design
- Color 2

Volume 4
- Color 1
- Graphic Exercises
- Dimensional Design

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General Introduction

Kurt Hauert,
Head of the Foundation Program

The Foundation Program at the School of Design in Basel, Switzerland is a fundamental education in art and design. It offers a number of interrelated, equally important courses. Subjects include drawing, color, three-dimensional studies, materials and tools, and exercises in form, aesthetics, and concepts, all of which are designed to promote optical and tactical sensitivity, formal perception, manual dexterity, and a clear understanding of creative processes and to clarify the students' individual talents. The program enables them to choose future professional training in graphic design, photography, typography, display design, goldsmithery, pottery, fine art, sculpture, and other related fields.

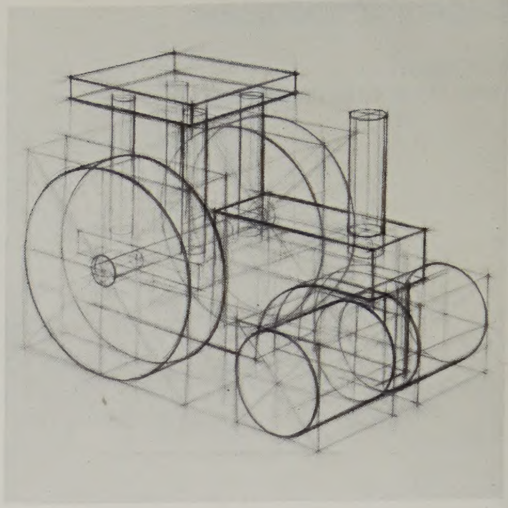
To be admitted into the program, students must be at least 15 years old, pass an entrance examination, and attend all the classes. The one-year program includes 42 classroom hours per week. All classes are conducted at the school and are limited to a maximum of 24 students.

Most of the faculty members are also professionals in their field, certified specialists who are active in visual, creative areas. Throughout the entire program, the teachers are available for individual or group consultation, which ensures that every student has an equal opportunity for a successful training. The teaching-learning process varies with each course. It can progress in several directions: linear, from simple to difficult principles; punctual, a collection of experiences derived from individual assignments; or complex, an analysis of variation sequences as an insight into the creative process.

The current standards of the program are outlined in this series, and the working procedure is explained clearly and understandably in chronological sequence. In order to clarify the interrelationships among the courses, they are categorized according to the teaching-learning process involved. The entire visual-creative program is presented in four volumes, each of which is a complete unit in itself and provides an introduction, course descriptions, and detailed illustrations.

The Foundation Program is based on an objective, developmental educational system over the past thirty years. It disregards fashionable vogues but allows enough freedom to integrate necessary innovations. It offers a model for all teachers, students, and administrators who are interested in a critical, investigatory approach.

In conclusion special thanks are expressed to those who devoted their time and energy to the realization of this work.



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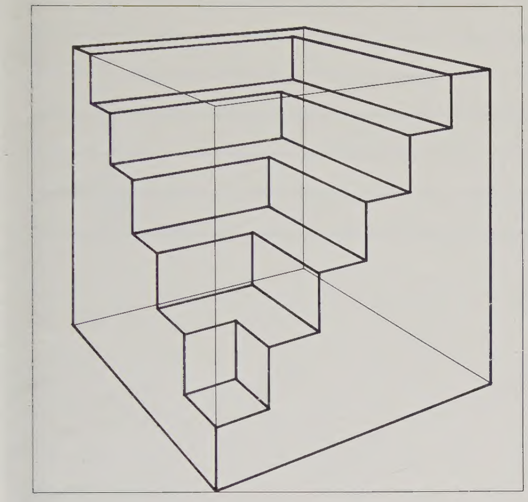

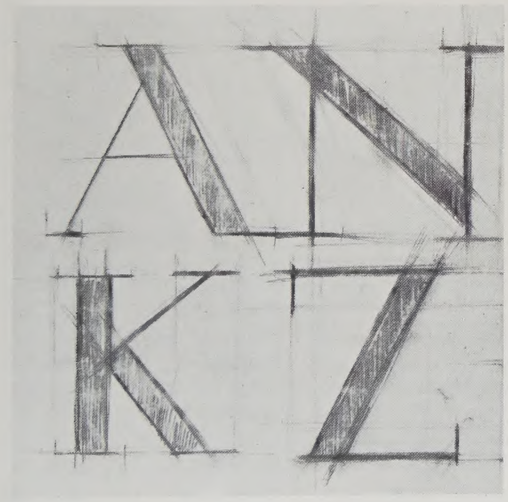

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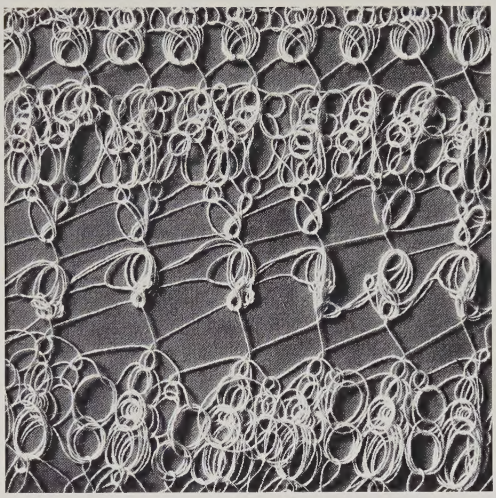

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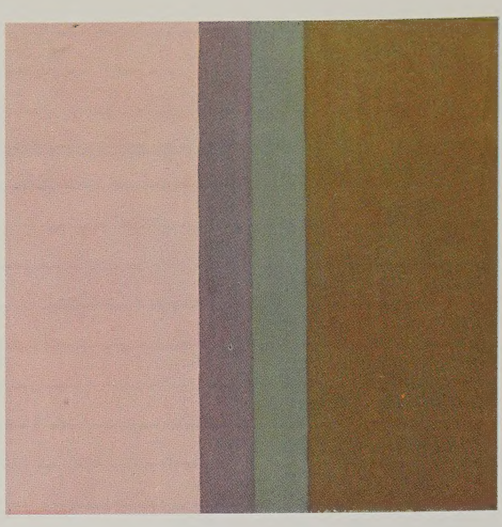

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Number of faculty in the Foundation Program	26
Number of students in the Foundation Program in six parallel classes	130 ca.

Directorship:

until 1970 Emil Ruder
since 1971 Niklaus Morgenthaler
Head of the Foundation Program:
since 1971 Kurt Hauert

Faculty of the Foundation Program

Beck, A.	Economics
Biesele, I.	Graphic Design
Bollin, M.	Sculpture
Bürgin, G.	Decoration
Burla, J.	Sculpture
Eya, L.	Architecture
Gautschi, R.	Painting
Grossenbacher, M.	Sculpture
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Kern, U.	Drawing
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Schäfer, E.	Drawing
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Volume 1

Object Drawing

Object and Museum Drawing

Nature Drawing

Freehand drawing is a traditional means of pictorial representation and communication. The drawing is a medium of mental and manual abstraction from perception and experience. The drawing process is a discipline by which visual sensitivity and the perceptual differentiation of form, rhythm, and abstraction are encouraged. The courses in life drawing provide a practical basis for personal and professional development through constant, intensive involvement in the drawing process. Fashionable stylistic tendencies and theories are consciously avoided; therefore professional demands are not considered.

The students draw objects from life using elementary forms. The teaching method is linear in structure: a drawing is developed from the total form to the related details. It is fundamentally an abstraction and not a photographic copy or an enumeration of detail. Personal drawing characteristics and means of expression are expanded through a mastery of the medium and through continual experience. The complex, creative process of drawing is structured through many interrelated activities: observation and perception, comprehension of form and proportion as a unity, abstraction of analyzed form into pictorial, dimensional illusion, mastery of techniques and means of expression, controlled chronological development of the creative process, and critical evaluation of the results.

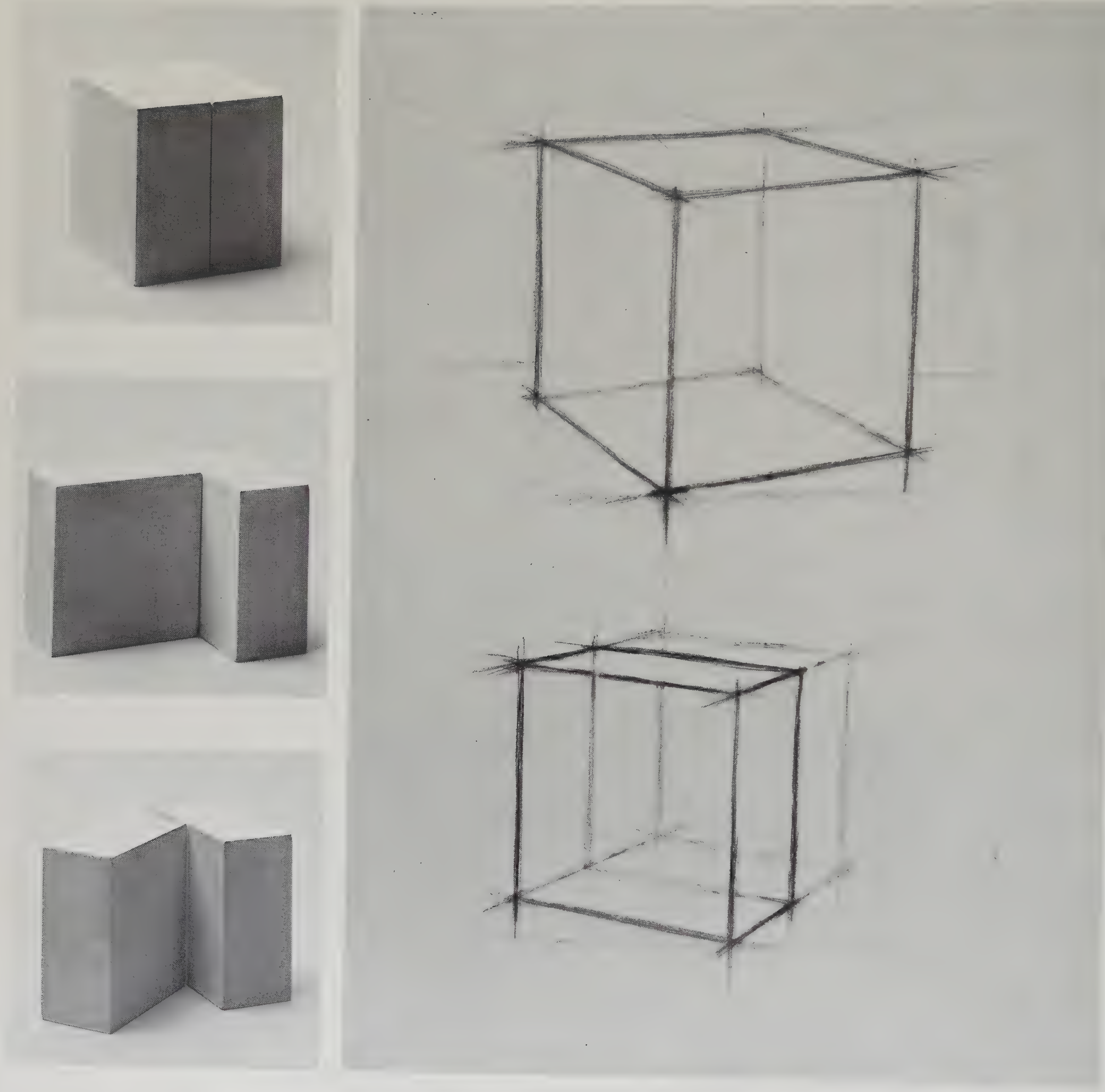
The reapplication of accumulated experience and knowledge leads to continued refinement and sensitivity. The drawing process is a continual, linear experience. Each result must be questioned: there is no single, absolute goal.

In this course pictorial, dimensional representations of constructed geometric objects are created with freehand drawing. Many familiar objects can be simplified into geometrical forms. They are always drawn in different positions below eye level. The eye perceives vertical lines as constantly stationary, parallel, and perpendicular to the ground surface – in contrast to optical reality. The dimensional foreshortening of a relatively small object has little effect on a drawing: the vanishing point of a foreshortened shape is found outside the drawing and must be supplied by the imagination. Both unseen and visible parts of an object are drawn in order to obtain a clear construction and to control the angles and proportions. Construction lines (horizontal and vertical lines, the central axis, diagonals and tangents, and overlapping and negative spaces) serve as a control.

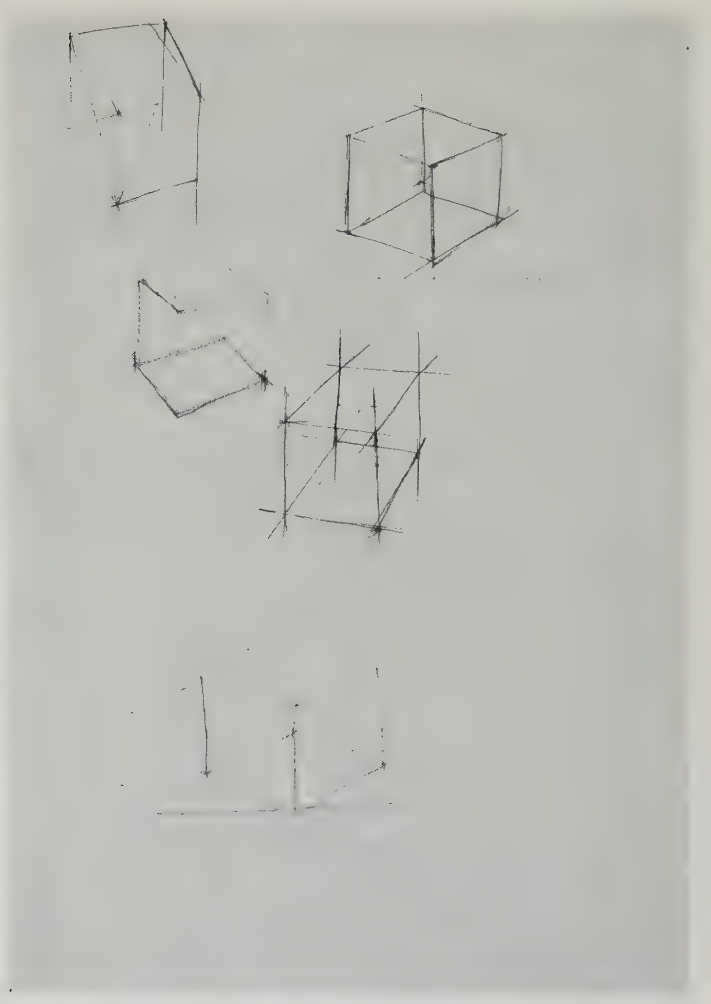
The drawing is begun with light, freely drawn lines and progresses from the total form to the related details. Construction lines are retained as evidence of the working process. Shading is avoided: dimensional effects are achieved through linear accents. An arrangement of drawings of the same object from different views and positions as well as isolated detailed studies develop a feeling for the composition of the page.

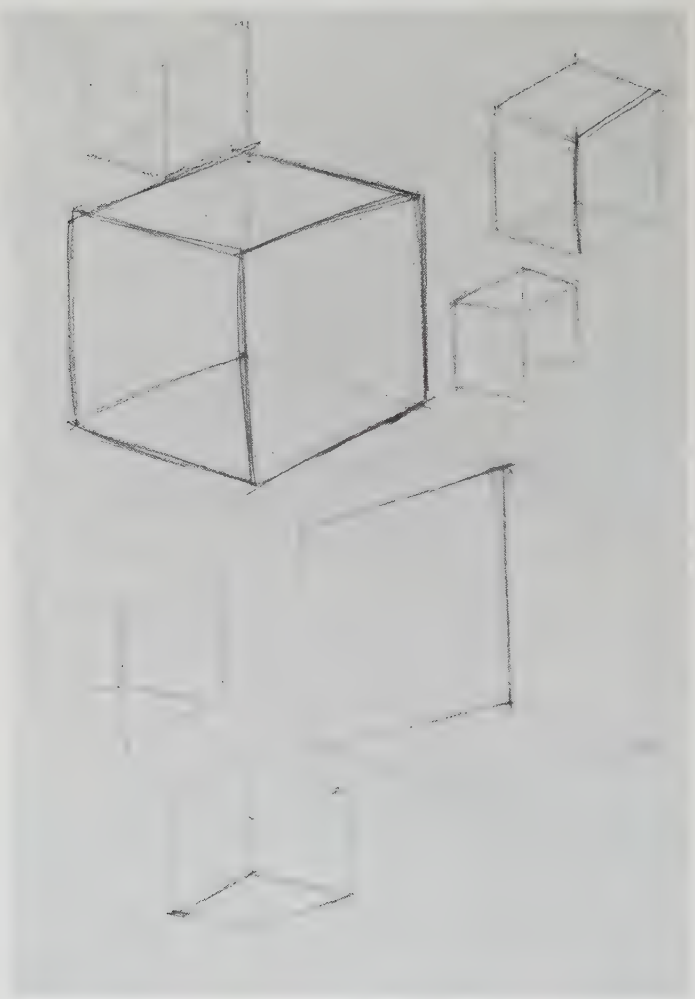
A foundation is achieved in the first months through drawing cubes, prisms, and cylinders. After these objects are mastered, the students work with hollow and ring cylinders, cones, spheres, and complex objects, drawing them separately or intersecting in different combinations. Soft pencils (2B or softer) and large drawing paper (42 × 59.4 cm) with a normal texture are used.

Spontaneity of pictorial expression is subordinated to a logical representation of the object.



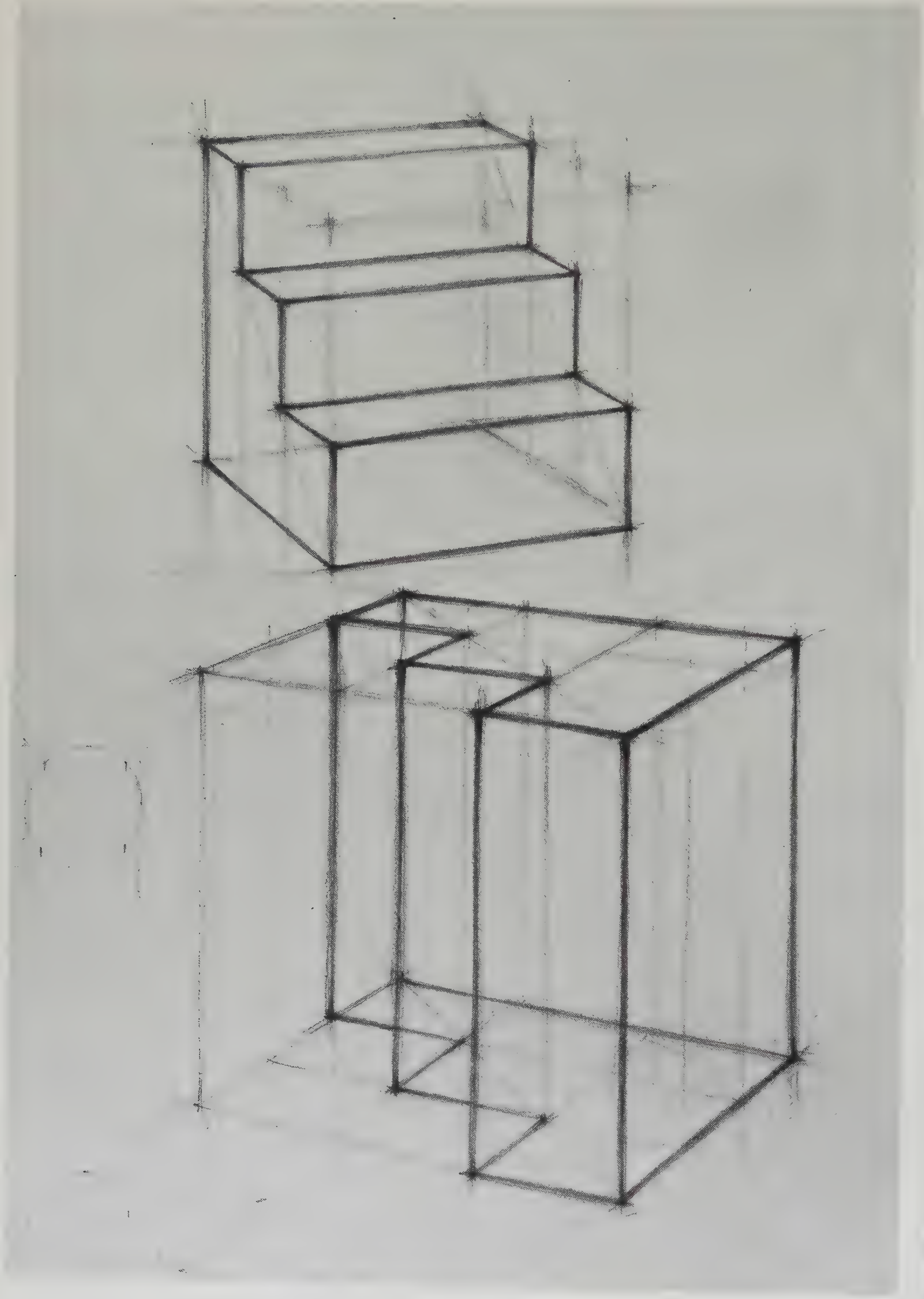
Proceeding from the basic measurements of the cube, different model positions are achieved by grouping the rectangular solids.

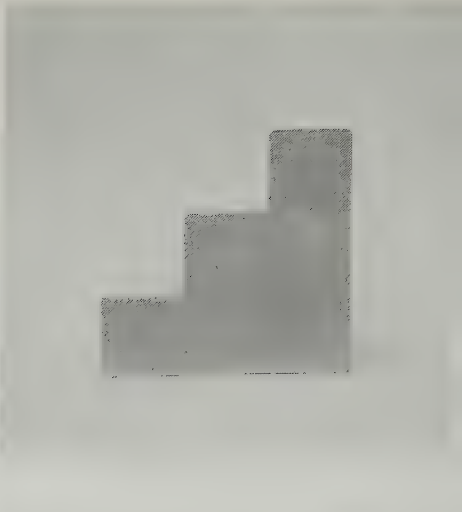




During the first weeks of classes the cube serves as the basic model for drawing. Its six squares are perpendicular (at right angles) to one another, and the lengths of the sides are equal. It is drawn from a slight top view and placed diagonally so that one corner is forward. The form of the three visible quadrates changes according to the cube's placement and the position of the drawer. An extreme top view is avoided in order to keep the imaginary vertical picture plane and the vertical lines parallel. In the lower study a solid rectangular form was discovered by bisecting a cube.

The two studies represent typical beginning results. They demonstrate the following mistakes: awkward and trivial interpretation, disorganized composition, confusion of scale, incorrect angles and proportions, distortion of parallel lines, stiff linear quality, and lack of clarity in pictorial expression.

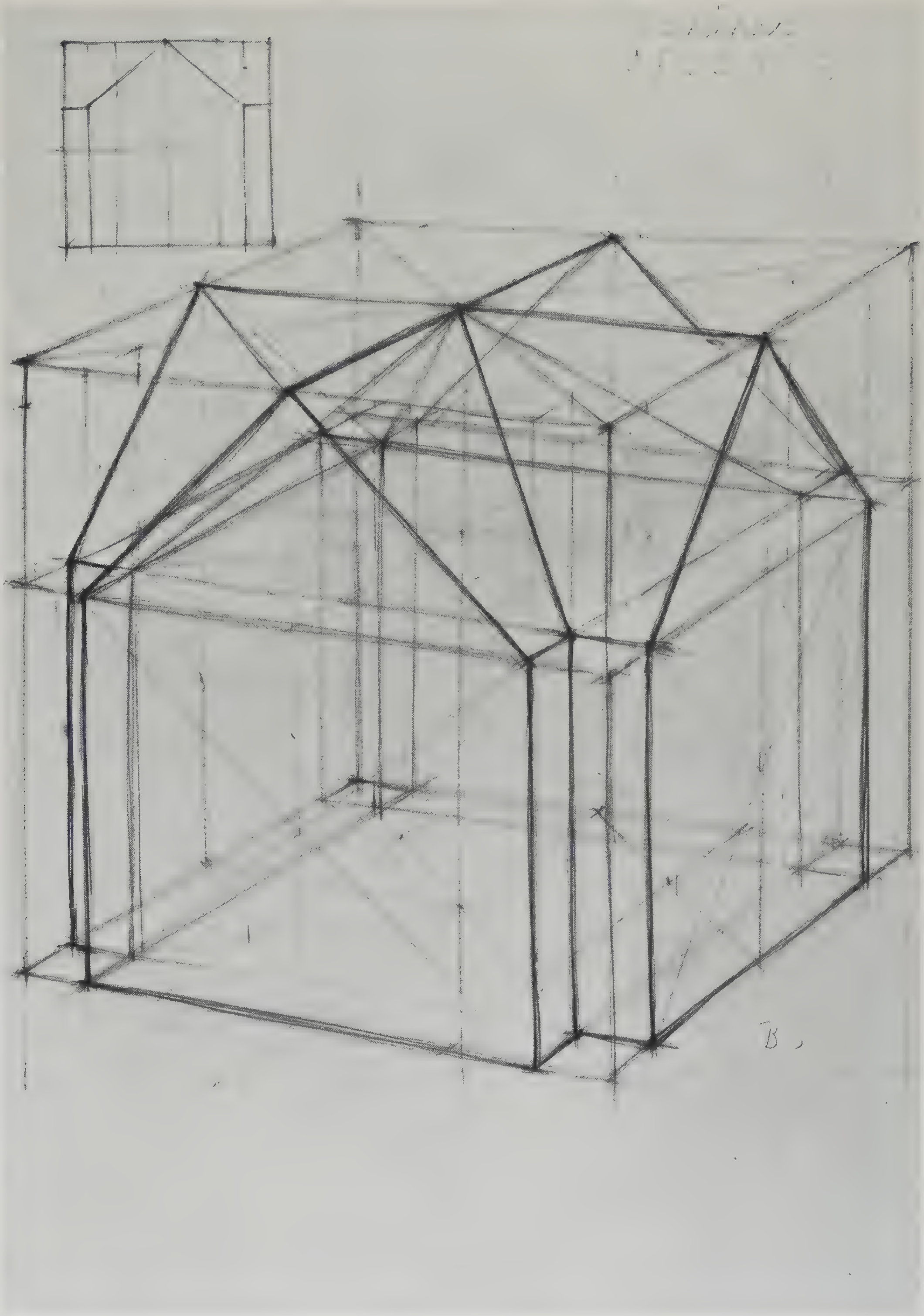




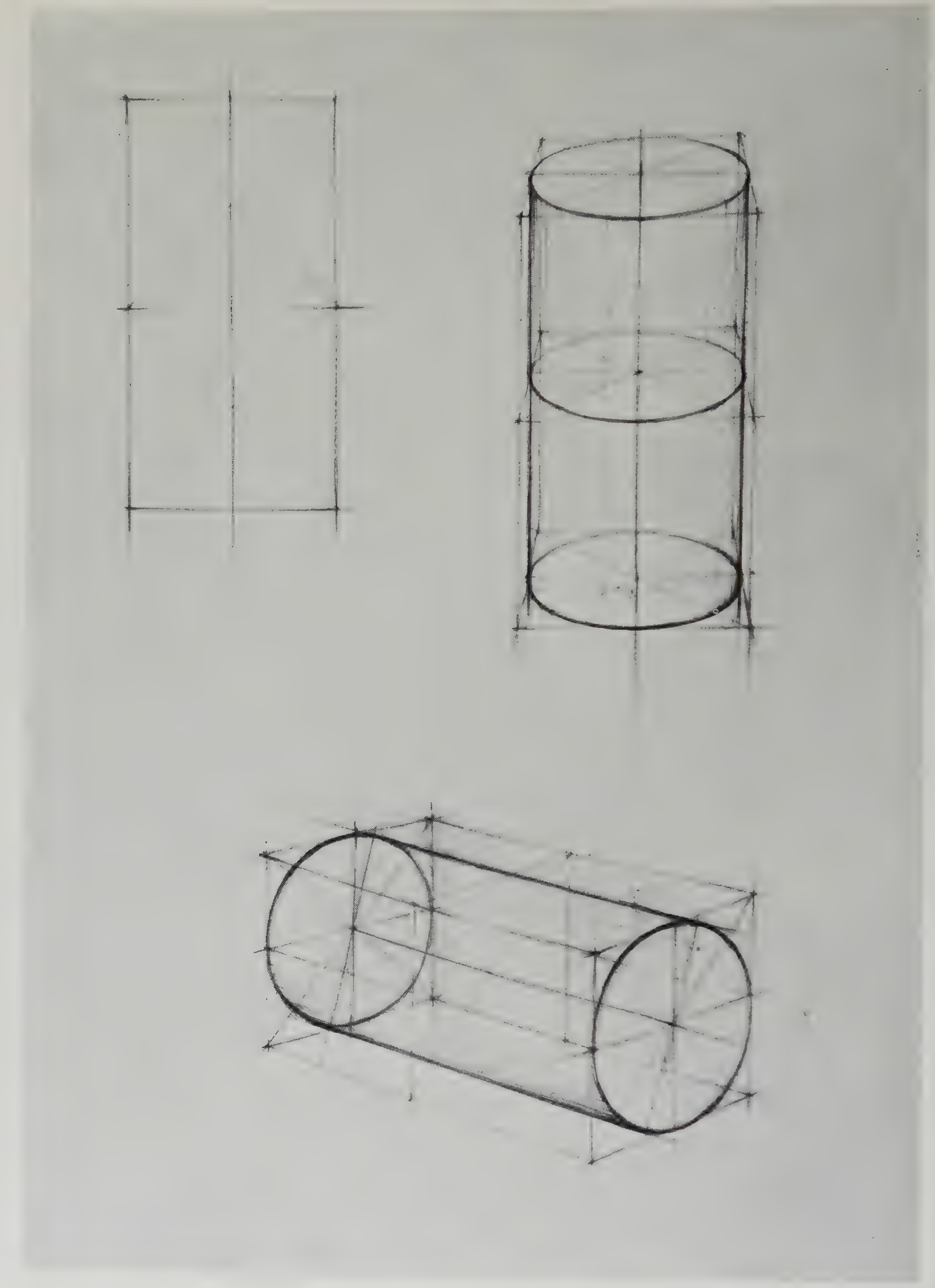
Angles and proportions can be drawn correctly by inserting a foreshortened circle into the base of the quadrate.

Both examples correspond to the basic proportions of the cube, which is structured and defined with light guidelines. The pictorial, dimensional form of the object is emphasized through the differentiation of linear accents and distinguished from the actual form of the cube. The drawing should represent a free and solid unity and not a flat outline.

Many different objects can be derived from a 15 cm cube.

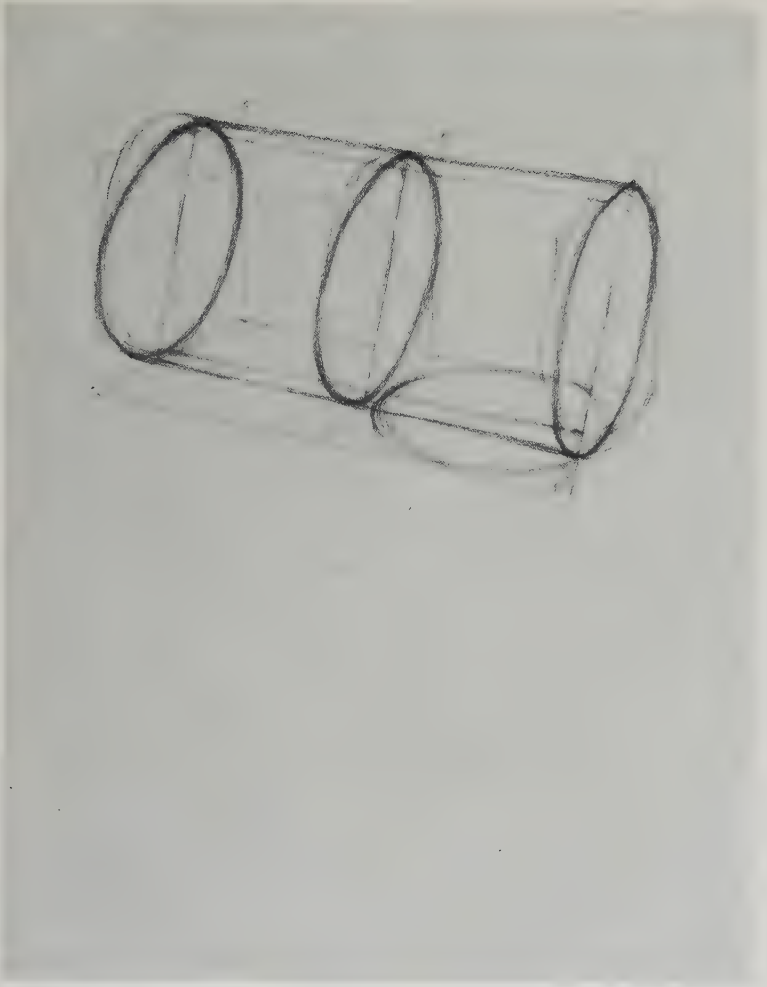
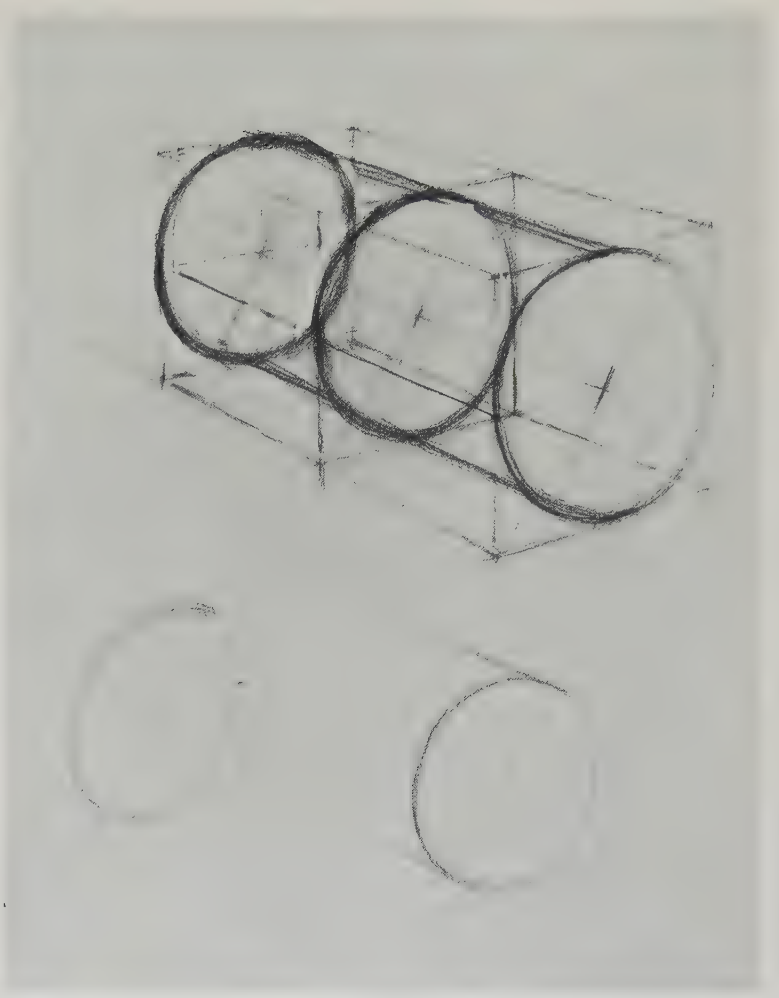
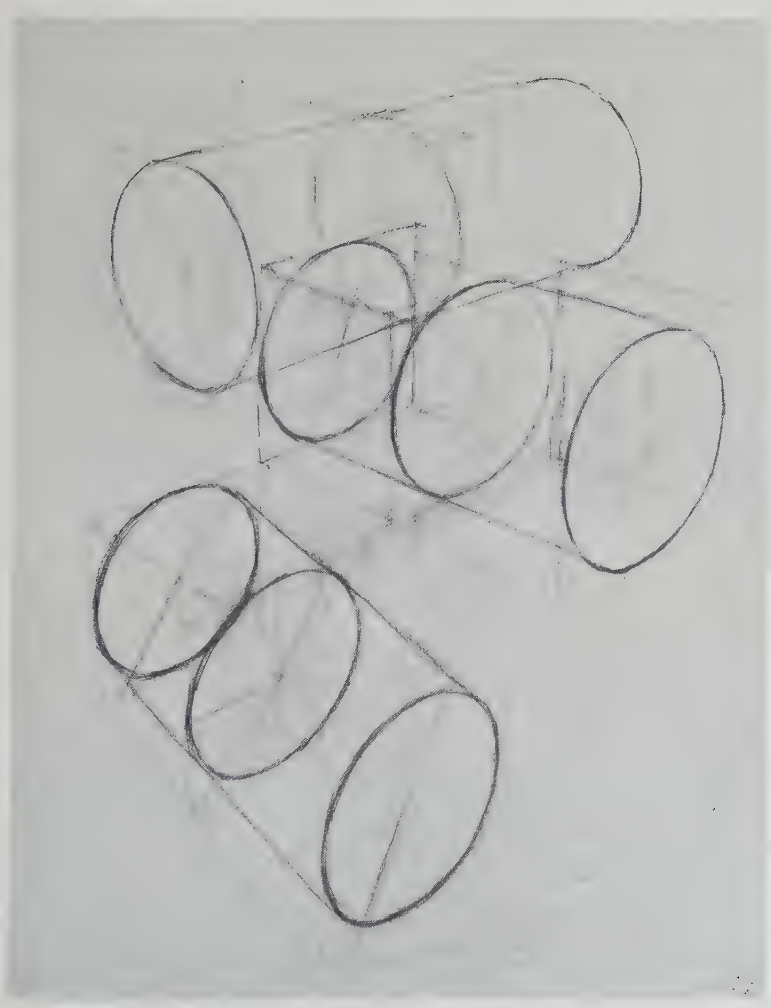
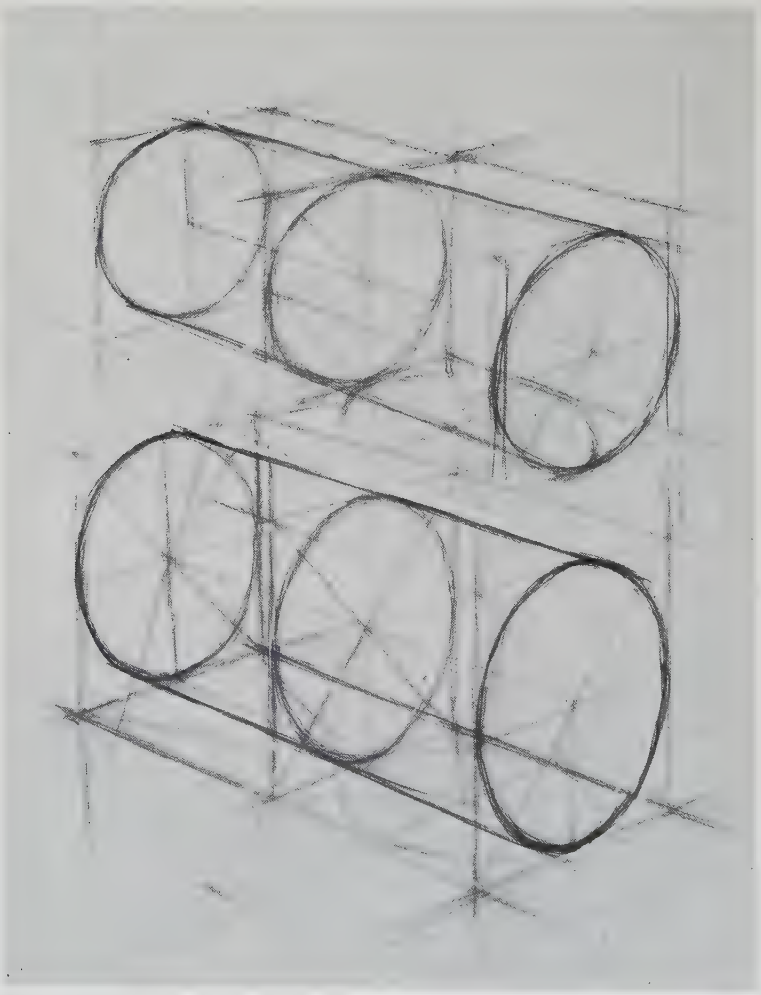


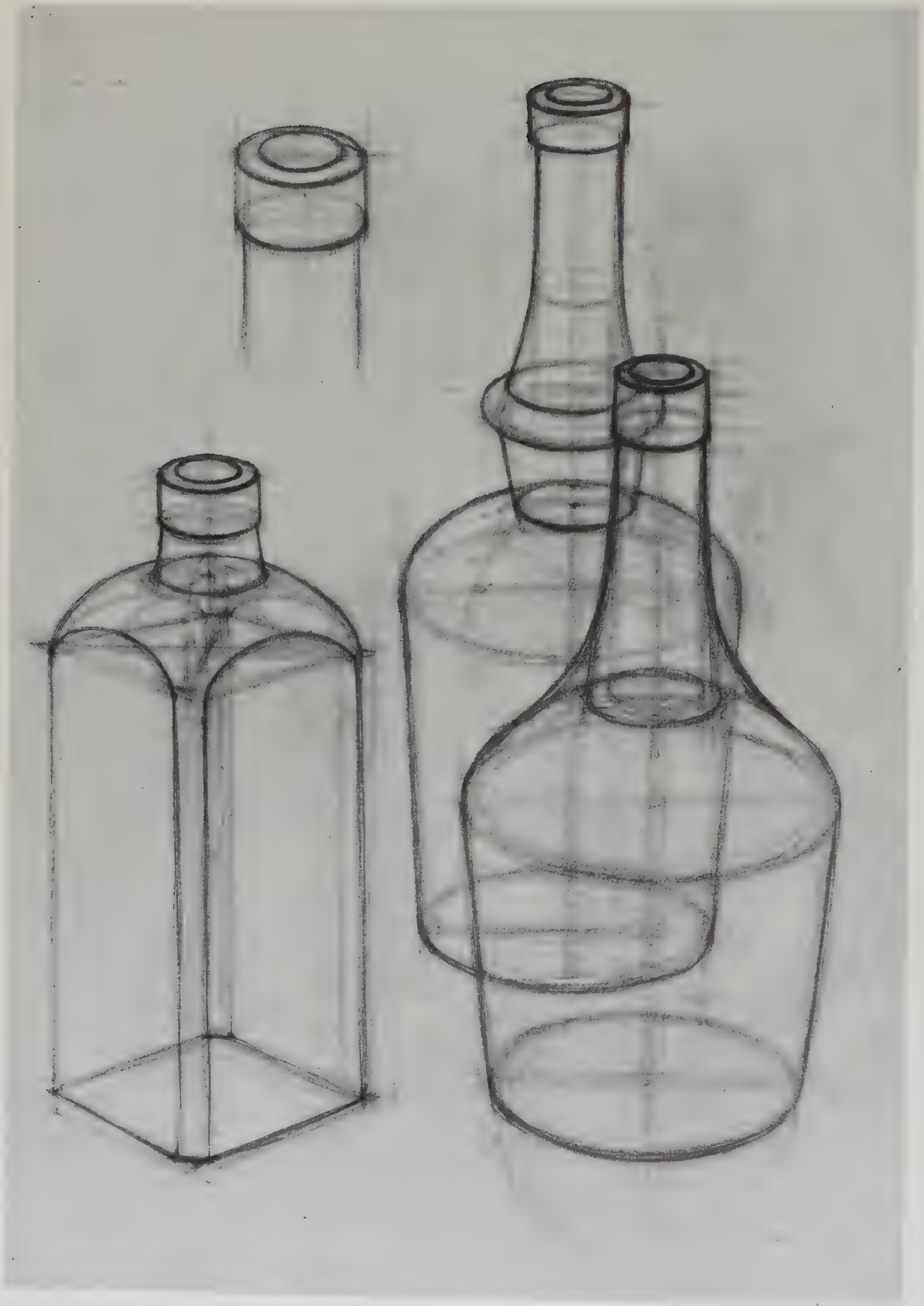
In the small frontal view at the upper left the structure, form, and proportions of the object are examined.



A cylinder is always constructed in relation to a prism: first two cubes are drawn. Inserting the correct foreshortened circle is relatively simple with the cubes in the proper spatial position. The foreshortened circular shapes always appear as geometric ellipses, the longer axes of which are perpendicular to the center axis of the cylinder. The vertical and horizontal axes of the ellipse touch the middle point on each side of the cube. The four corner shapes should give the illusion of being equal.

At the beginning of the course dimensional imagination and pictorial sensitivity may not be sufficiently developed to avoid the common angle and proportion mistakes that appear in these four drawings.

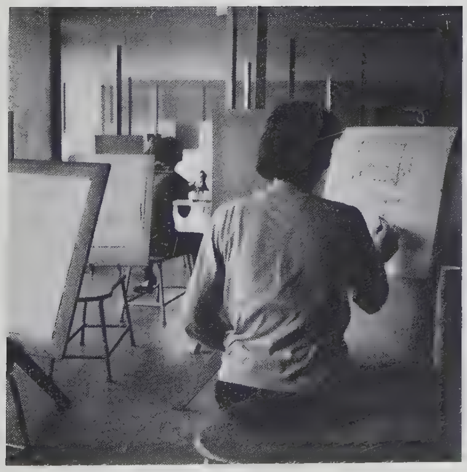


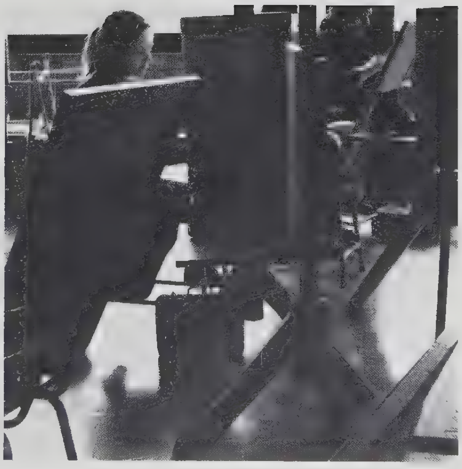
Mastery of construction principles and experience with the prism, cylinder, cone, and sphere are prerequisites for drawing complex objects such as bottles. Linear cross sections, which define the basic forms, strengthen the dimensional effect of the drawing and show the volume of the object. Overlapping and negative spaces offer interesting creative possibilities for composing single objects and groups of objects.

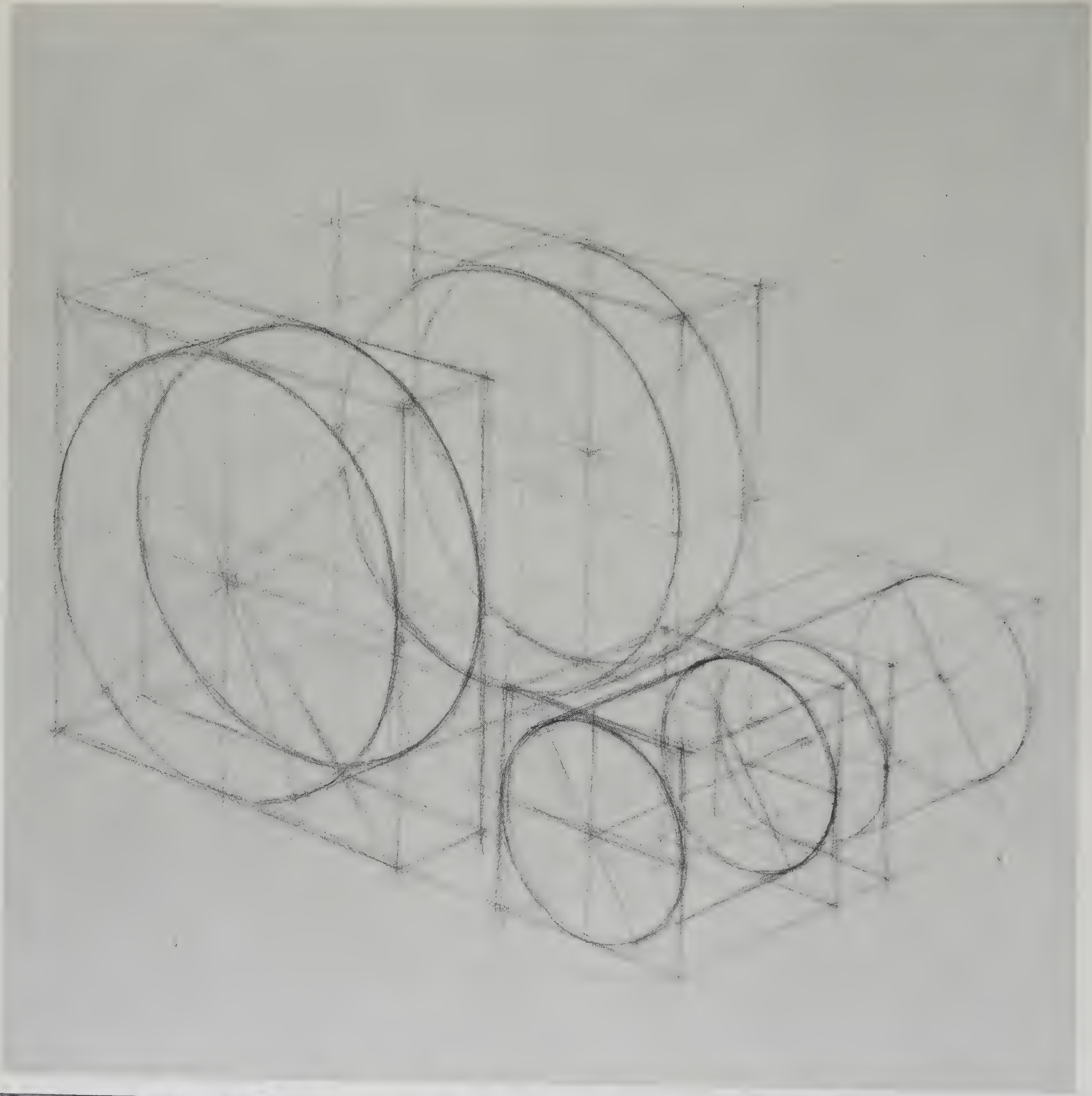
Overlapping objects are easily recognized and controlled through their transparency.

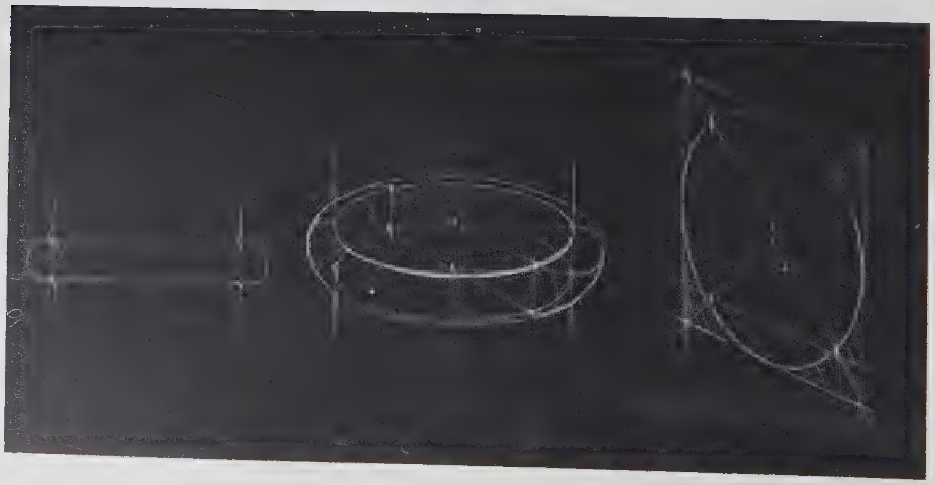
The following six pages show the chronological stages in drawing an object. The first step is to draw light lines that serve as surface building elements. Rectangular solids are structured from the dimensional representation of the ground surface and its subdivisions; the cylinder is inserted and the drawing completed with the remaining elements. Photographs of the object in different positions are contrasted with the finished drawing.

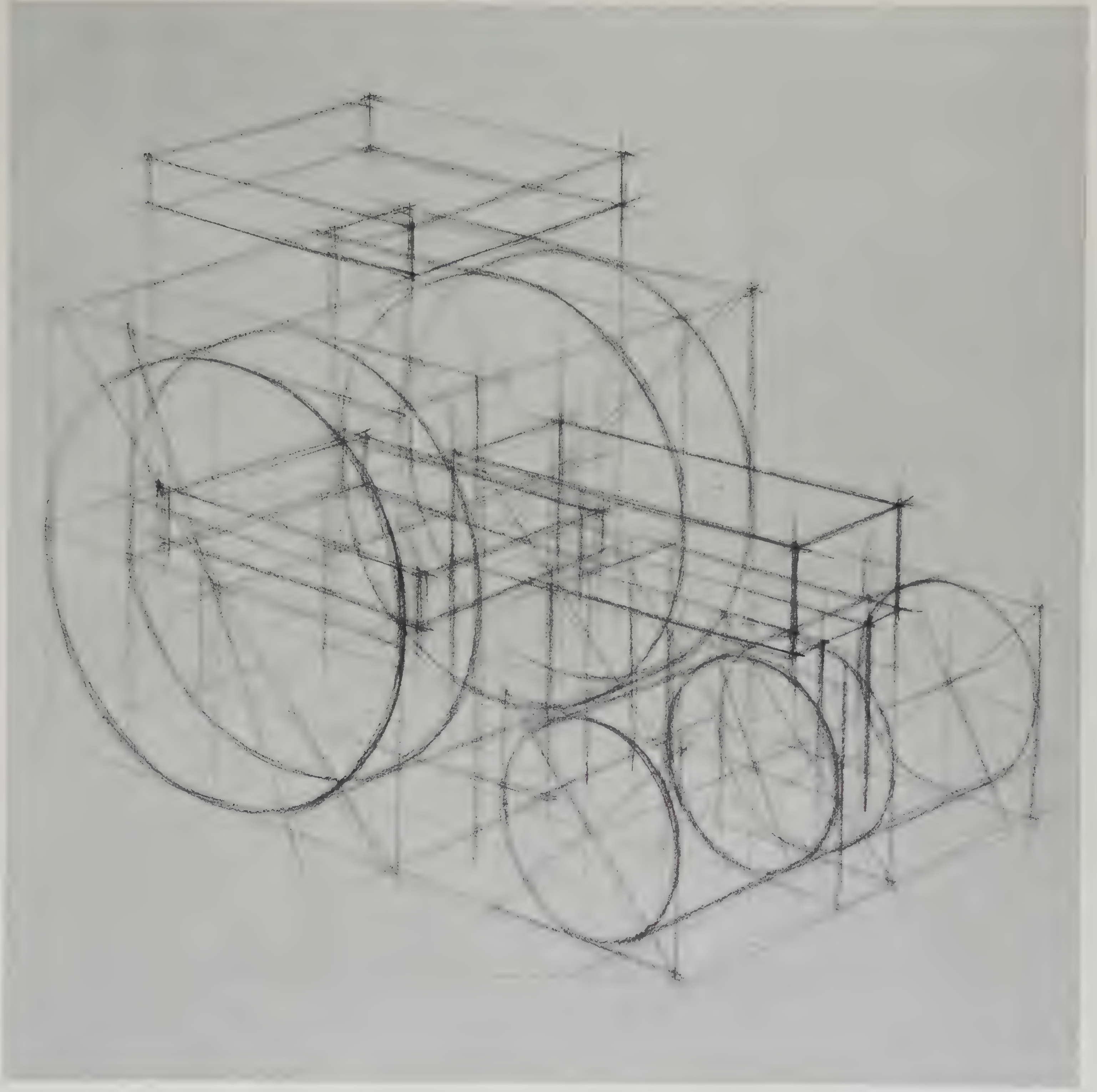
The photographs on the following two pages show the students at work. Classroom facilities are exceptionally mobile. Object stands, drawing benches, and drawing boards are used for individual and group classes. The drawing board serves as a working surface. It is placed on the bench at a right angle to the direction of the eye. The position of the working surface corresponds to the picture plane and allows a better view of the work. The object is positioned on the stand, which is easily adjustable and serves to neutralize the surroundings. The students work in a free and uncramped posture at approximately arm's distance from the working surface.





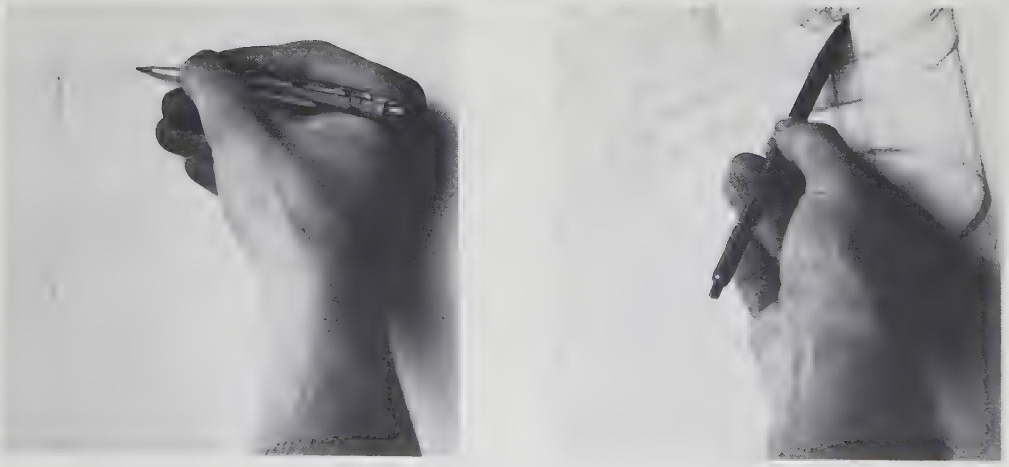


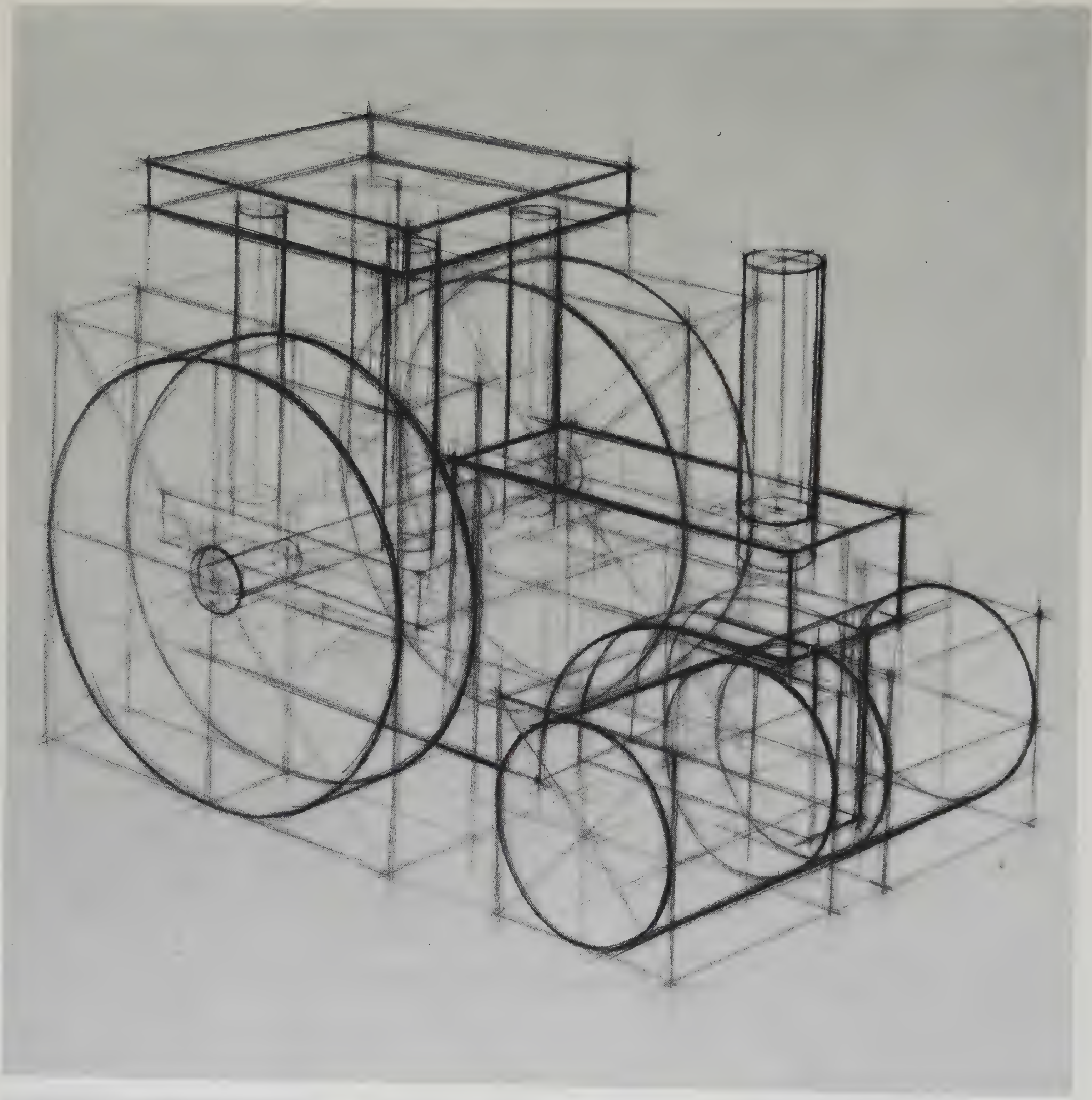


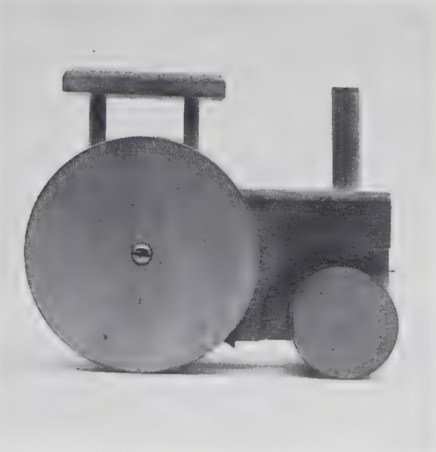


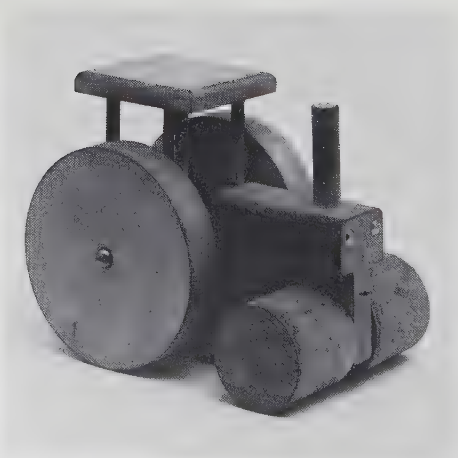
The work of previous students is displayed for inspiration. Fundamental questions are explained by the teacher and demonstrated on the blackboard.

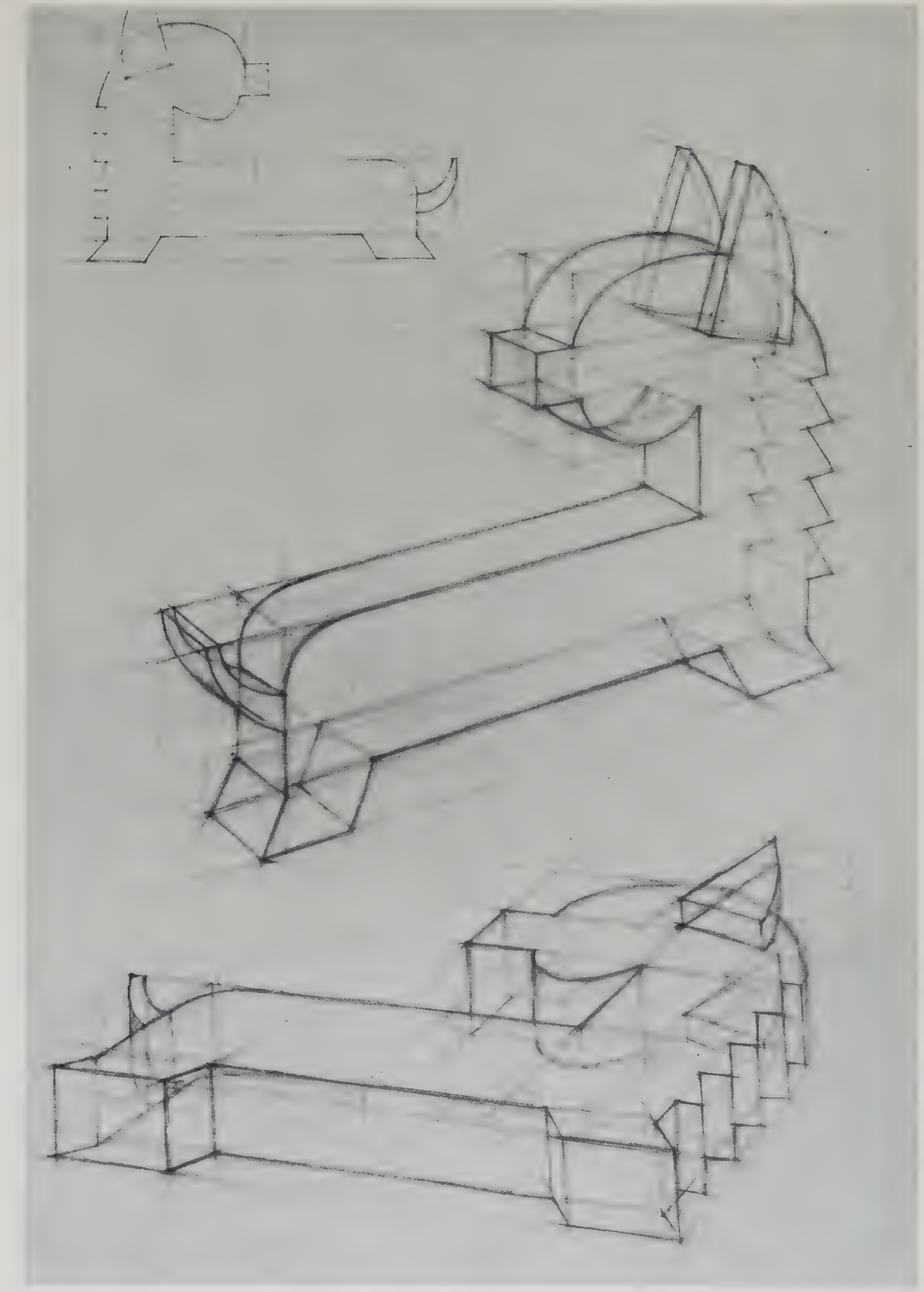
The pencil should be held without supporting the hand or arm on the paper. If necessary, the small finger can be used to guide the hand.



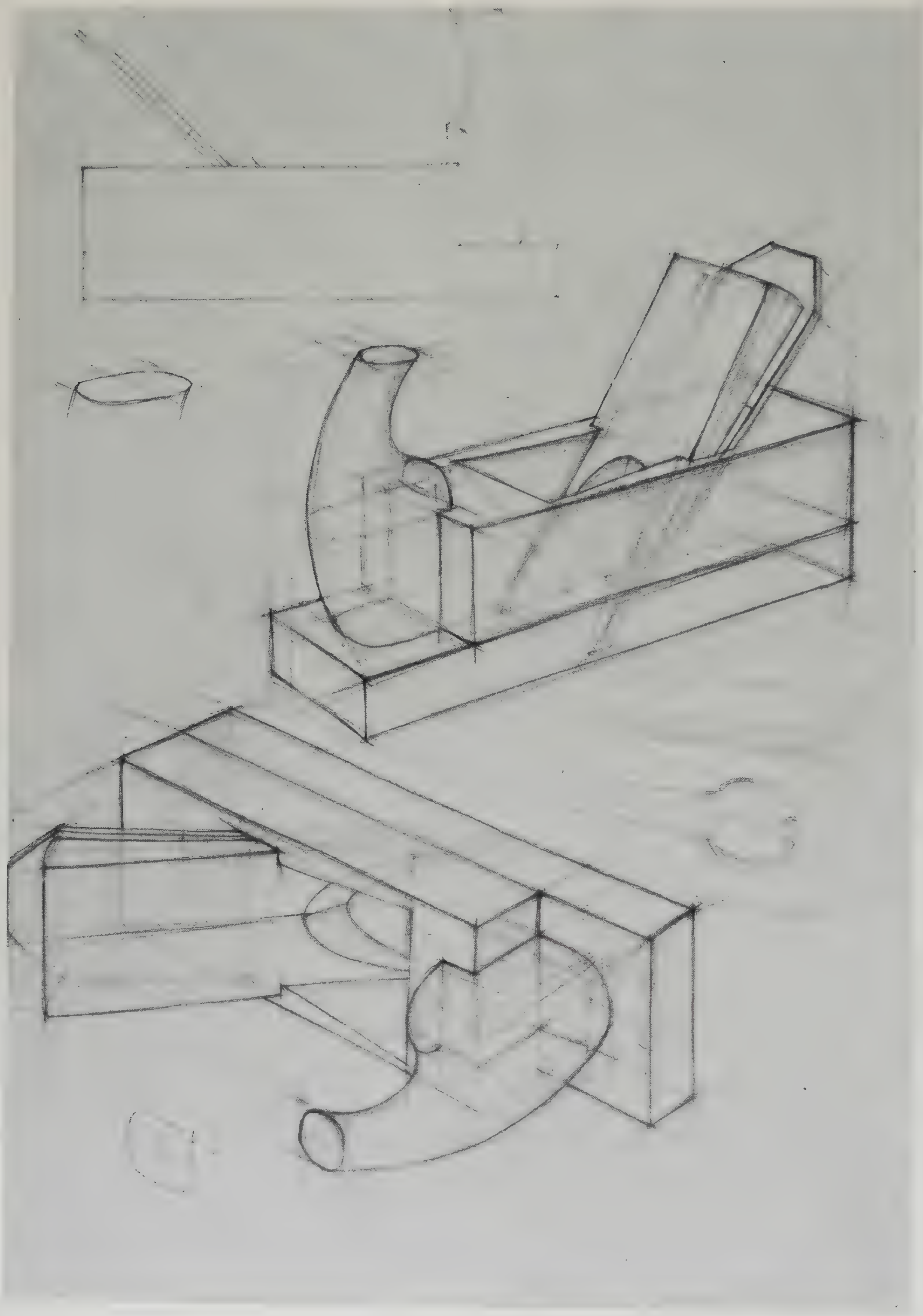






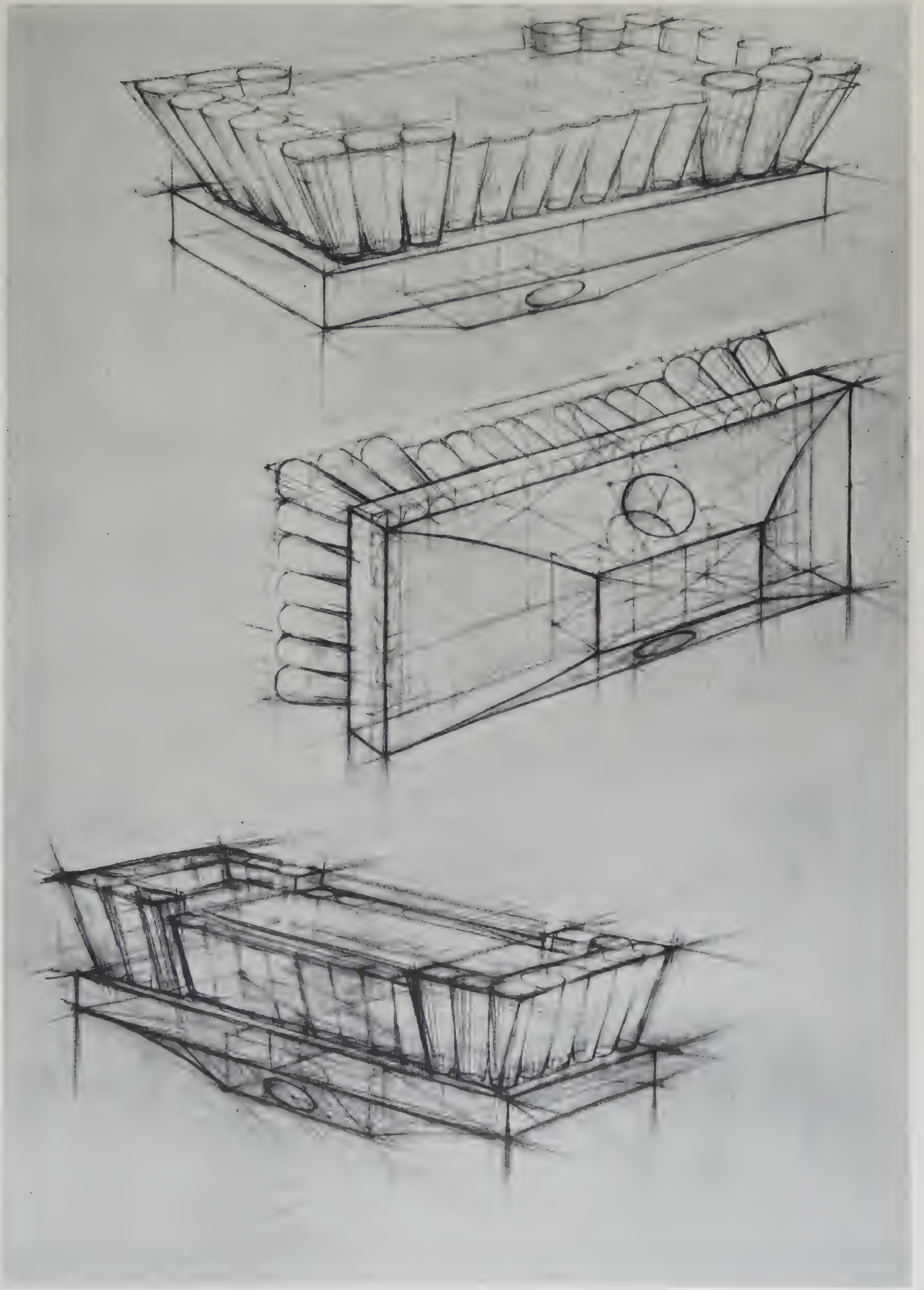


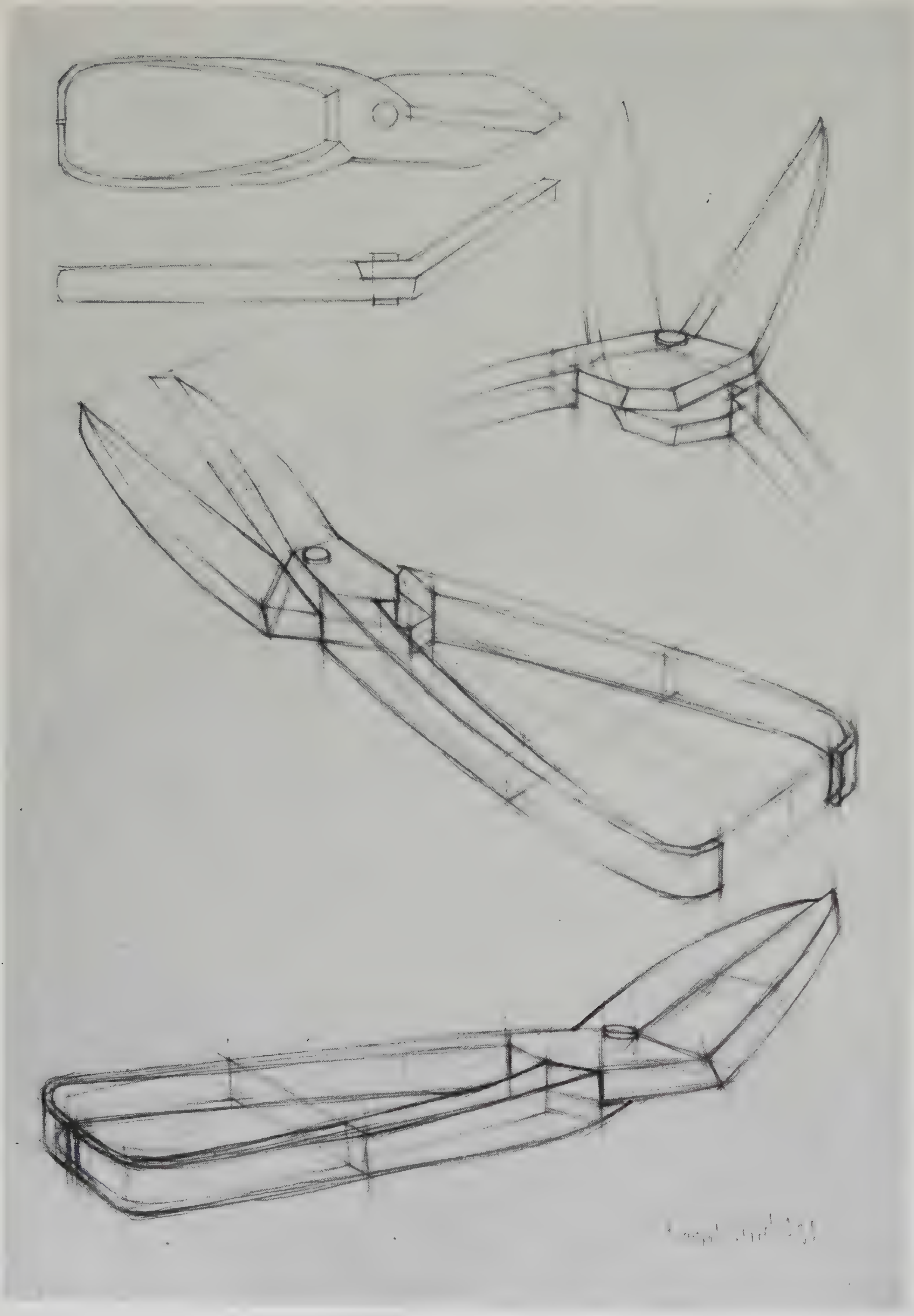
The drawing procedure is comparable to that of the carpenter or sculptor, who finds his mental image in roughly formed material. In drawing the toy animal the spatial relationship, position, and development of the surfaces are created from a rectangular block.

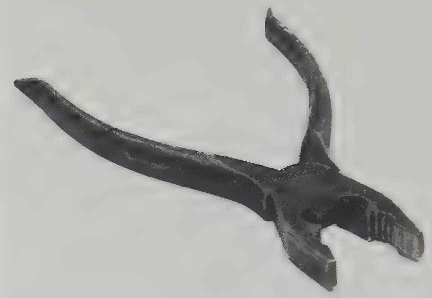


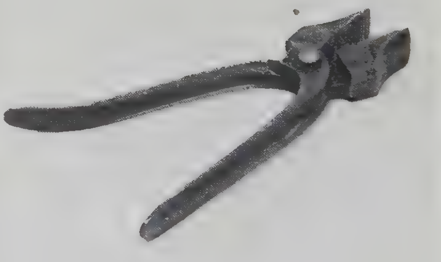
The representation of a wood planer is carefully constructed by subdividing a block into the appropriate cross sections. Complicated shapes such as the hand grip can be achieved in this way. In searching for the correct forms various accents are developed.

The bristles of the broom should not be rendered as a series of small strokes. The student should recognize the essential forms, such as the obtuse pyramid composed of a blunt cone and the bundles of gathered bristle.

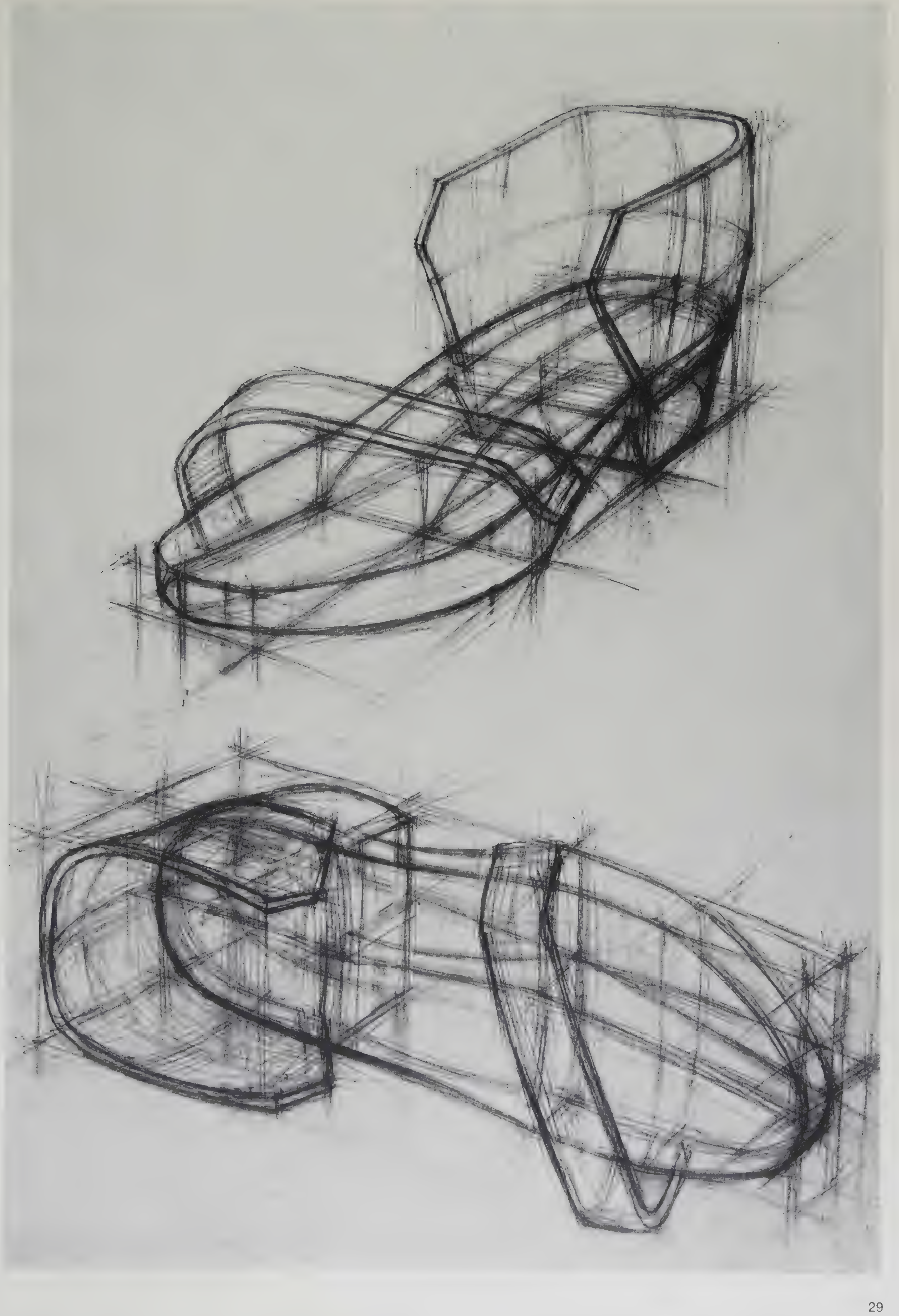


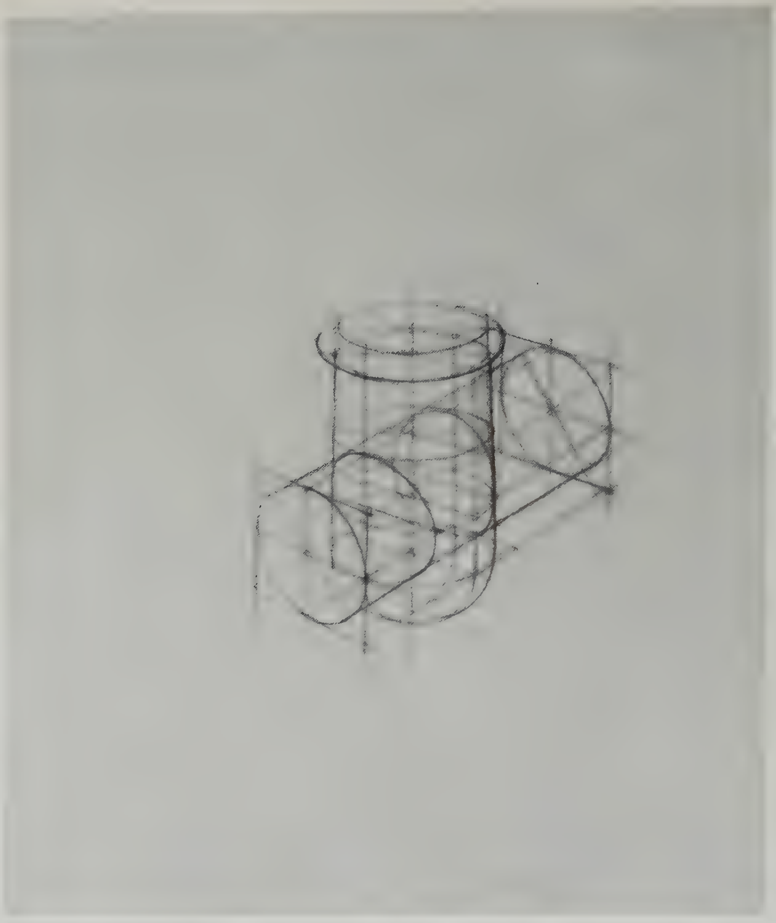




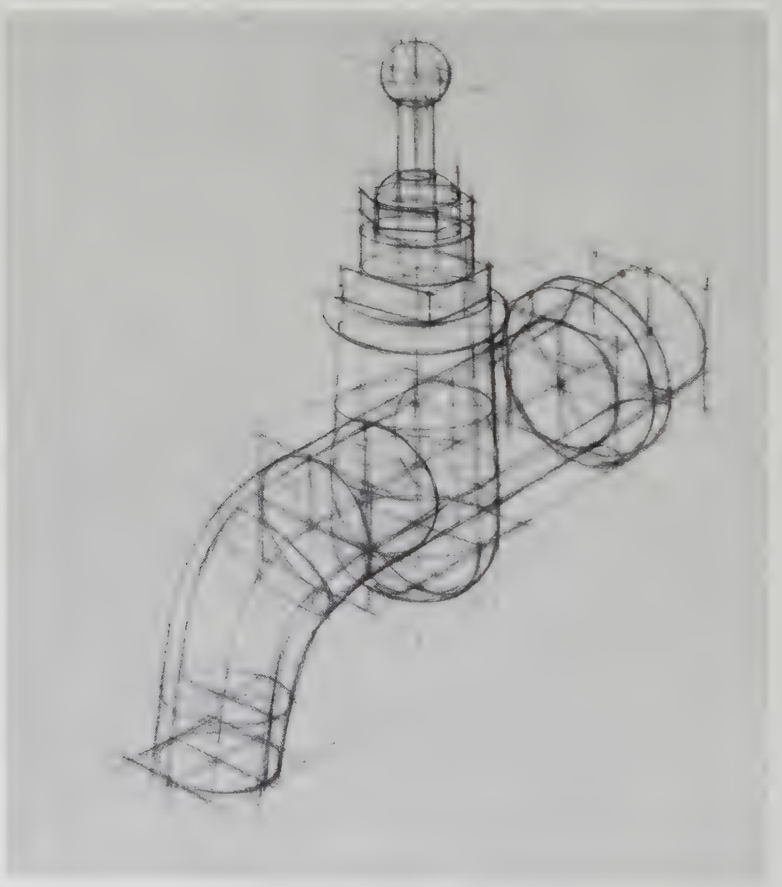


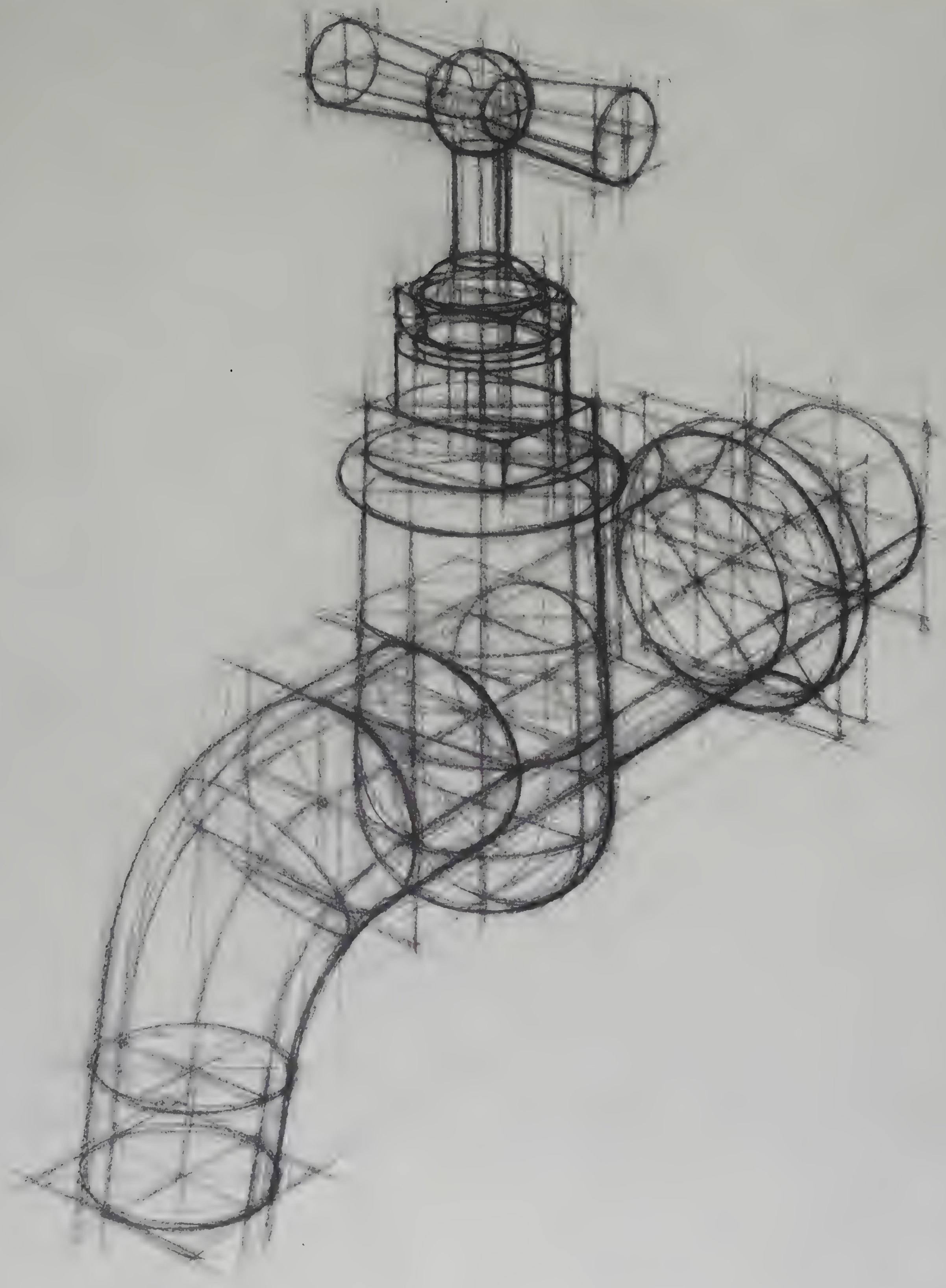
In these studies of pliers and shoes negative spaces are drawn as shapes. They clarify the structure of the object and the spatial effect of the representation. Dependency on such helping forms can be avoided with experience.

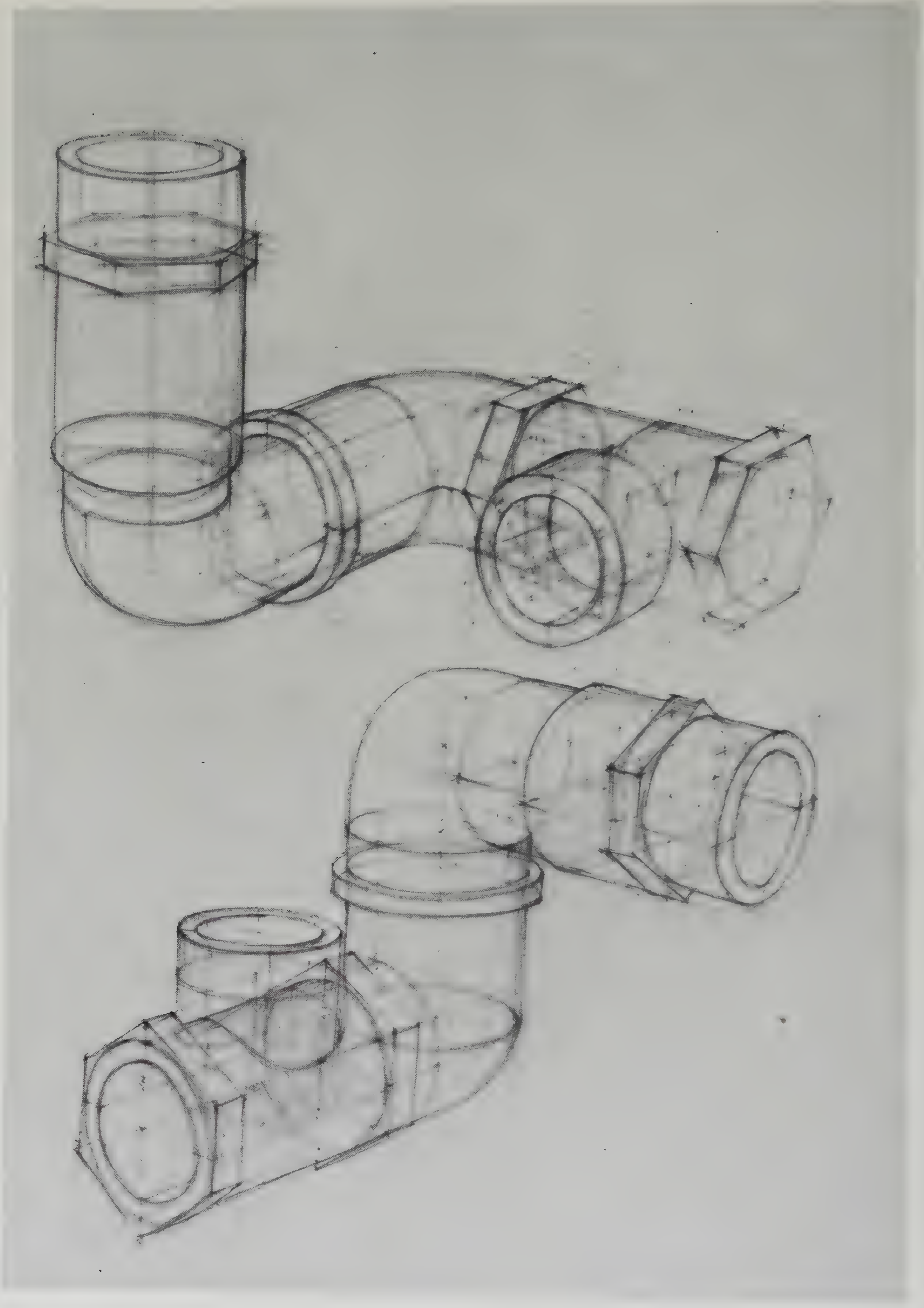




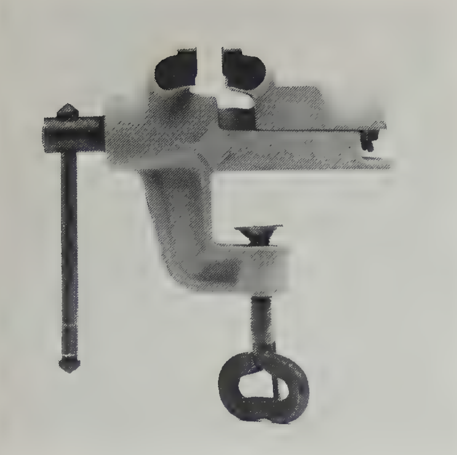
The object in this drawing, a water faucet, consists of a number of different elementary shapes, such as prisms, cylinders, cones, and spheres. The graphic representation is carefully constructed from the center of the object, the intersection of the two cylinders.

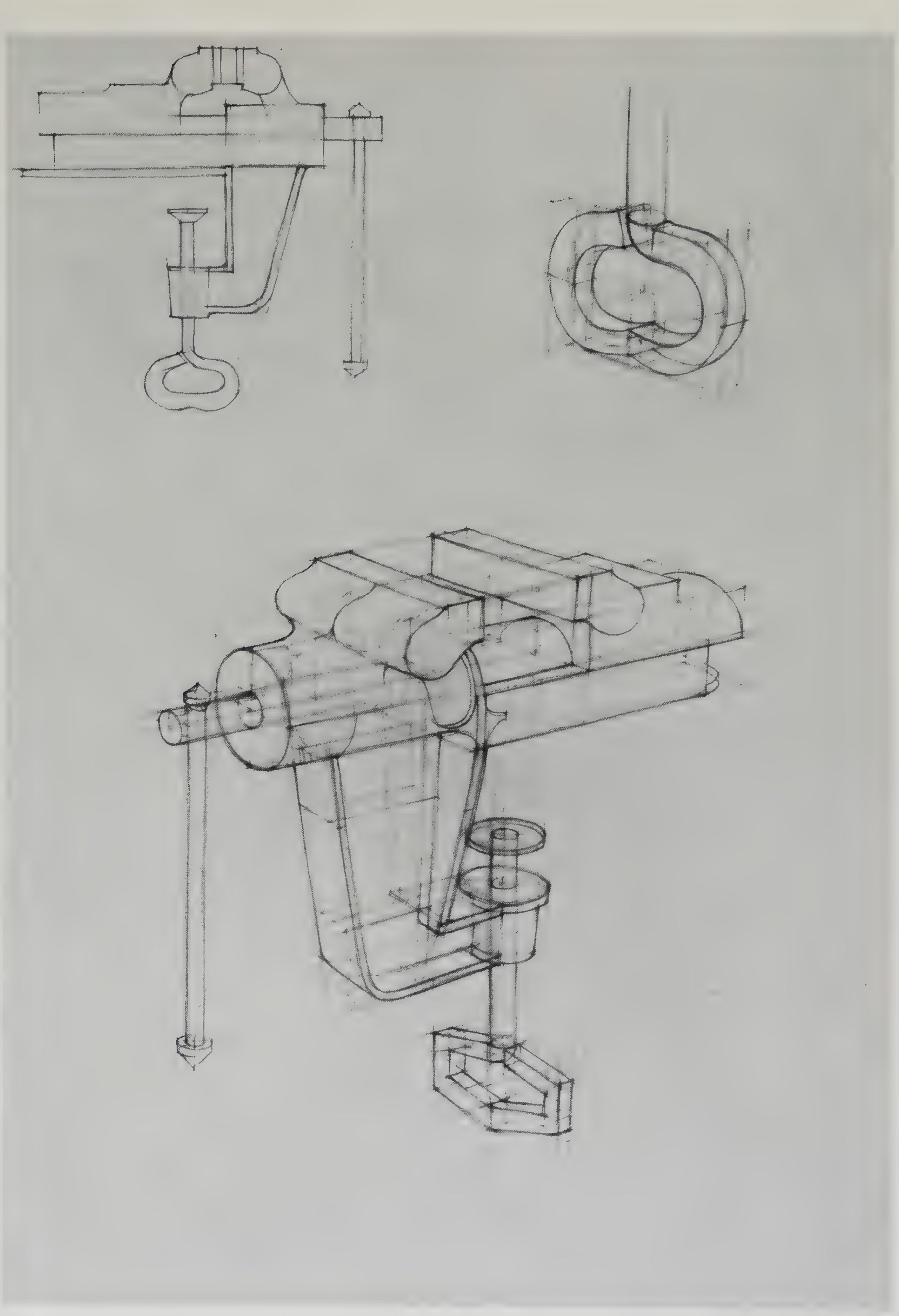


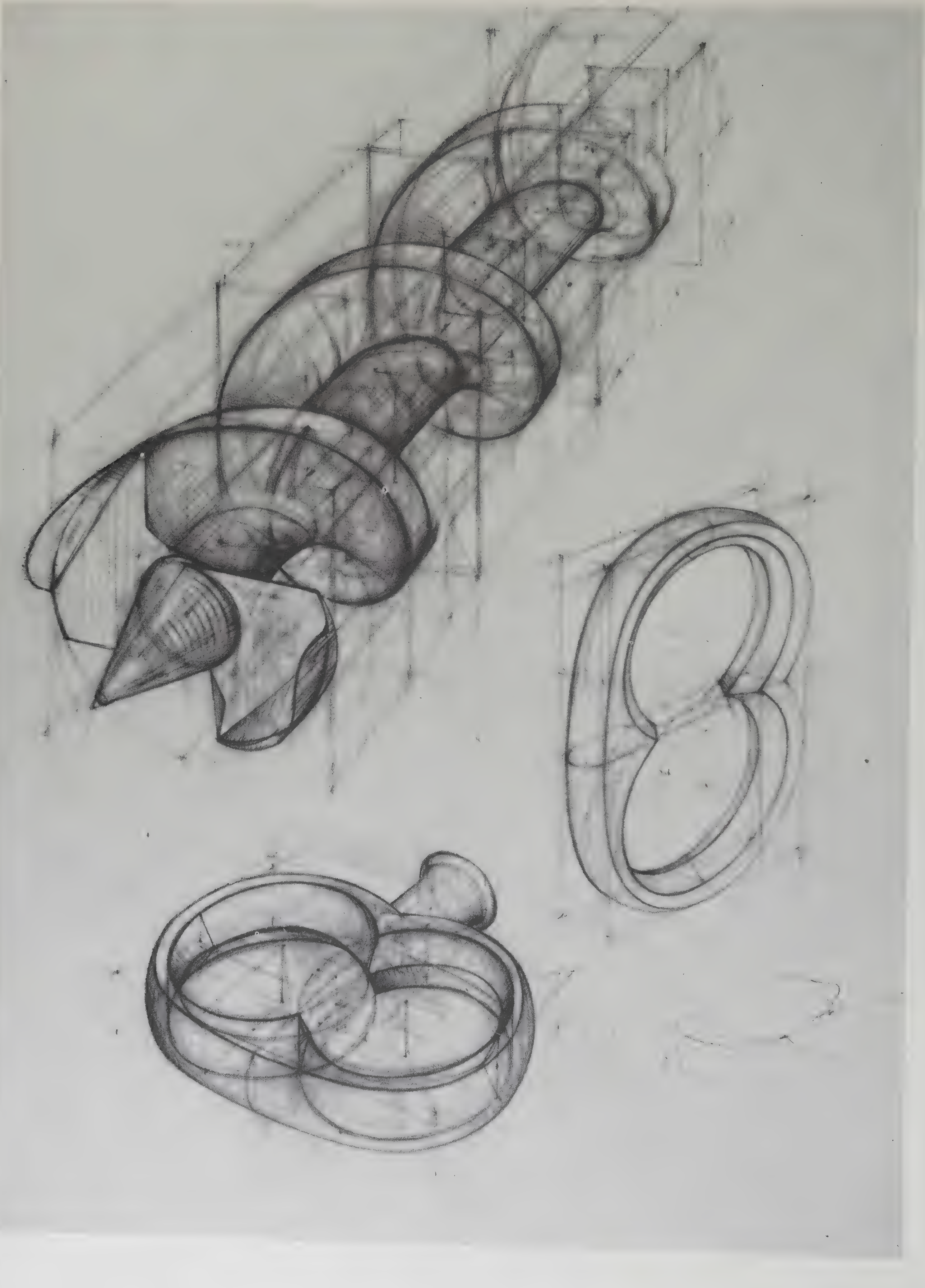


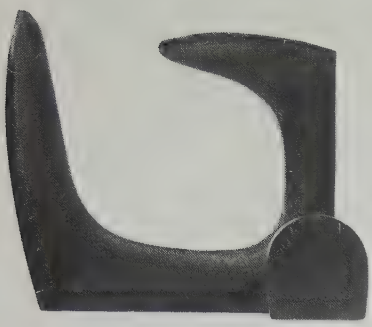


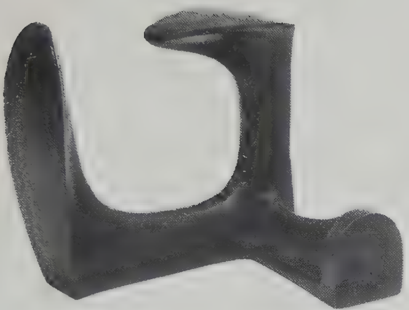
In contrast to the shoes, the representation of complex technical objects such as the water faucet and vise demands a stronger conception of form. The formulation of the lines and the style in which they are drawn make a statement about the material character of the object. Its effect and function should be understood and represented accordingly. Unfunctional, unclear, or extreme positions should be avoided. Complex details are simplified in order to clarify the form as a whole: they are enlarged and drawn as separate studies, which should be composed harmoniously on the page. In the top left corner of the page the object is usually represented in a small profile view. Its proportions and forms are examined here.

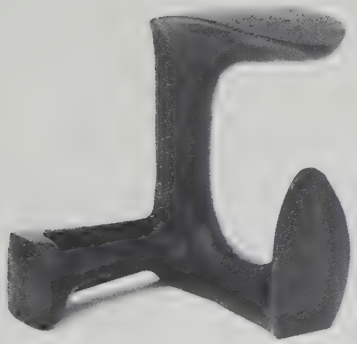


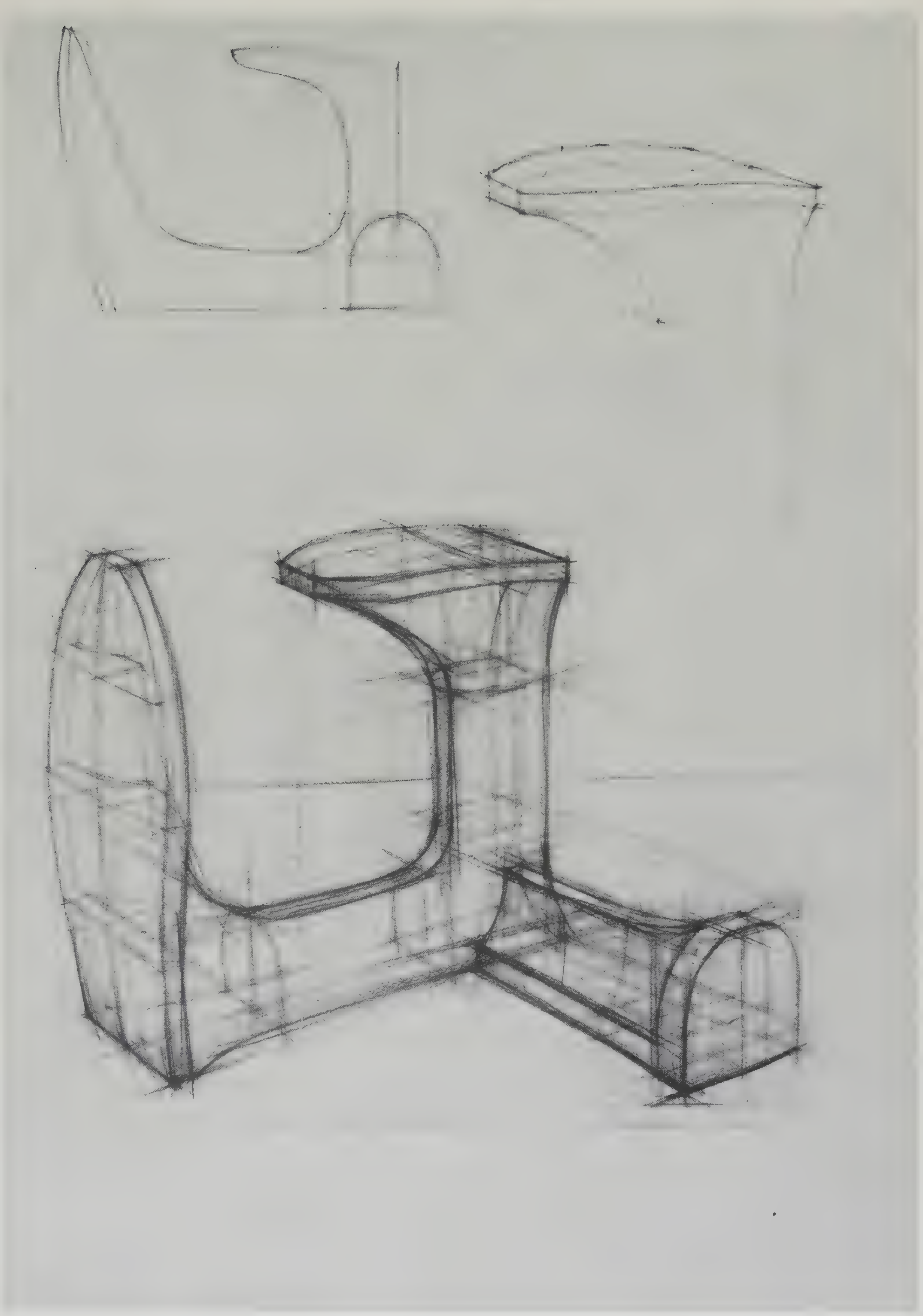






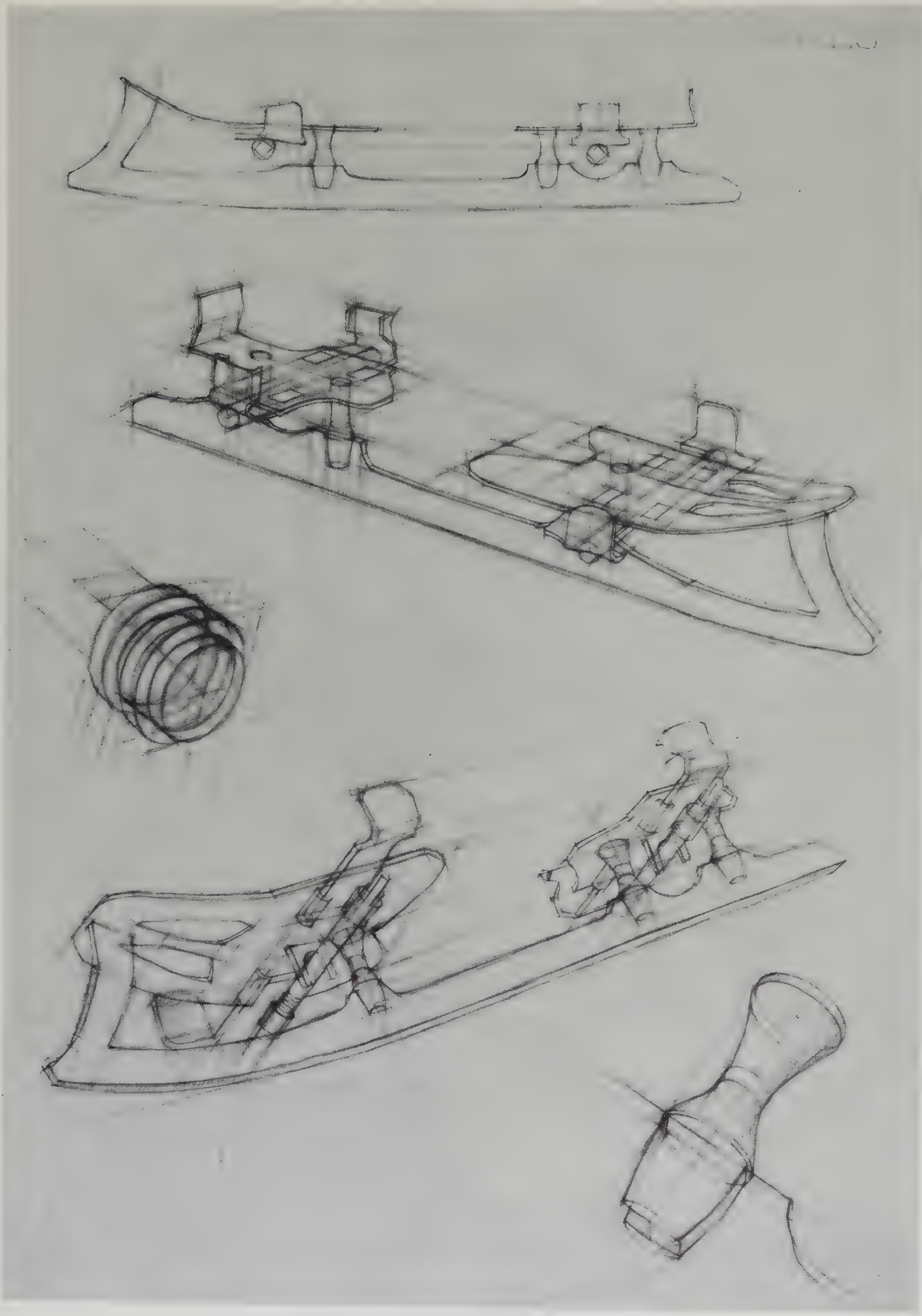






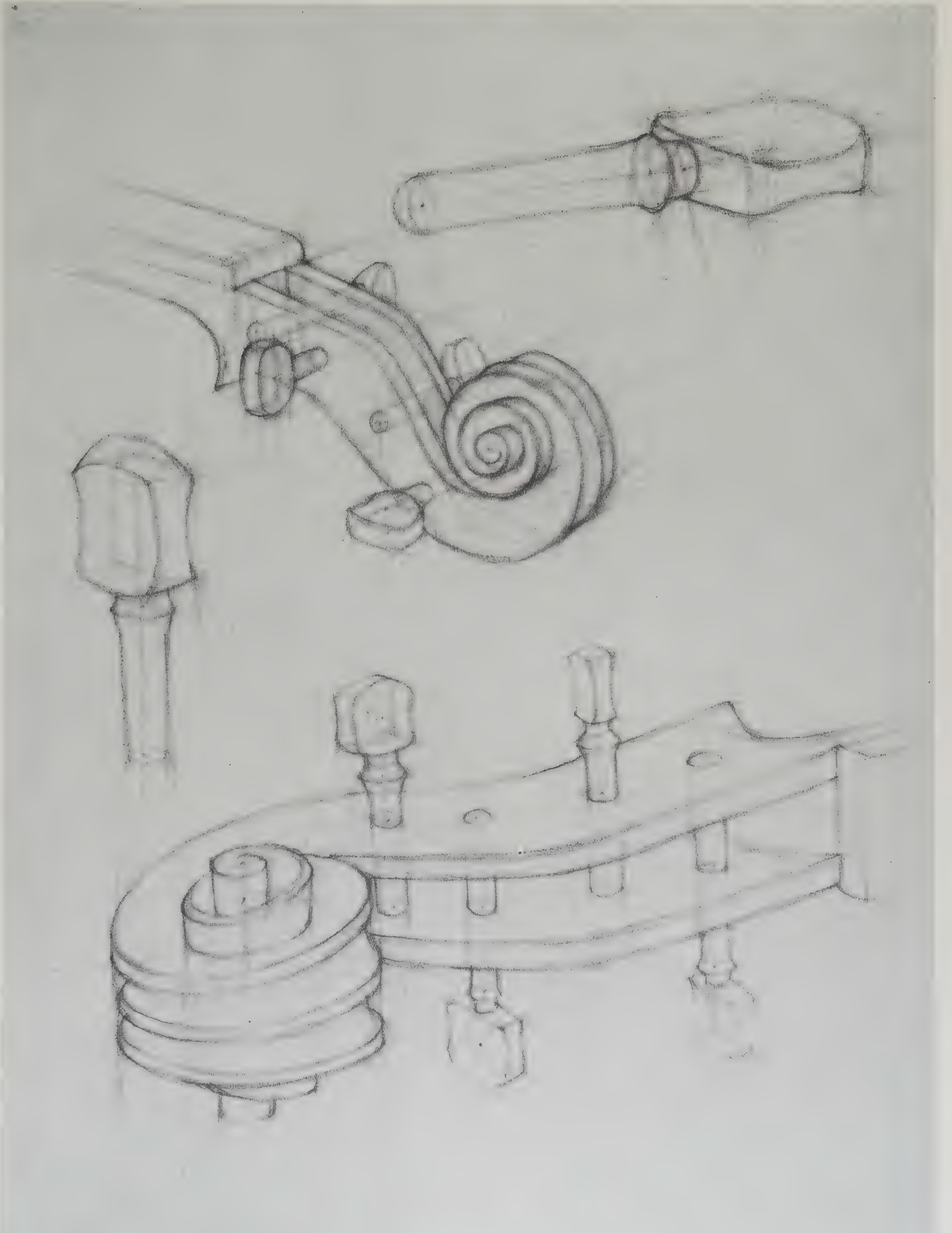
The drill is developed from a reclining cylinder composed of sectional planes. The fixed points of the foreshortened, winding spiral lie within these sectional planes. The accentuated tones, the swing of the line, and the light insertion of shadow strengthen the spatial effect.

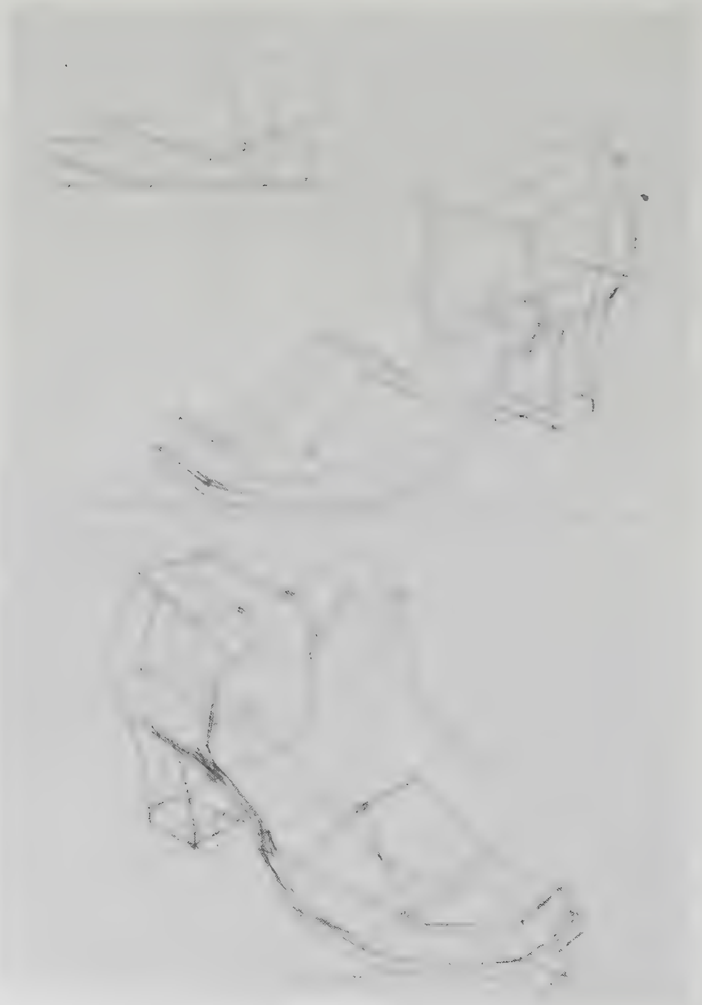
The basic structure of the cobbler's horn is composed of three planes that intersect at right angles, on which the details are drawn. This allows a free but exacting linear treatment.



The blade and shoe supports of the ice skate are composed of two planes that intersect at right angles. The object is lying on its side, creating a foreshortened diagonal plane that requires careful spatial observation. The numerous details must be subordinated to the larger forms, and should not confuse the student.

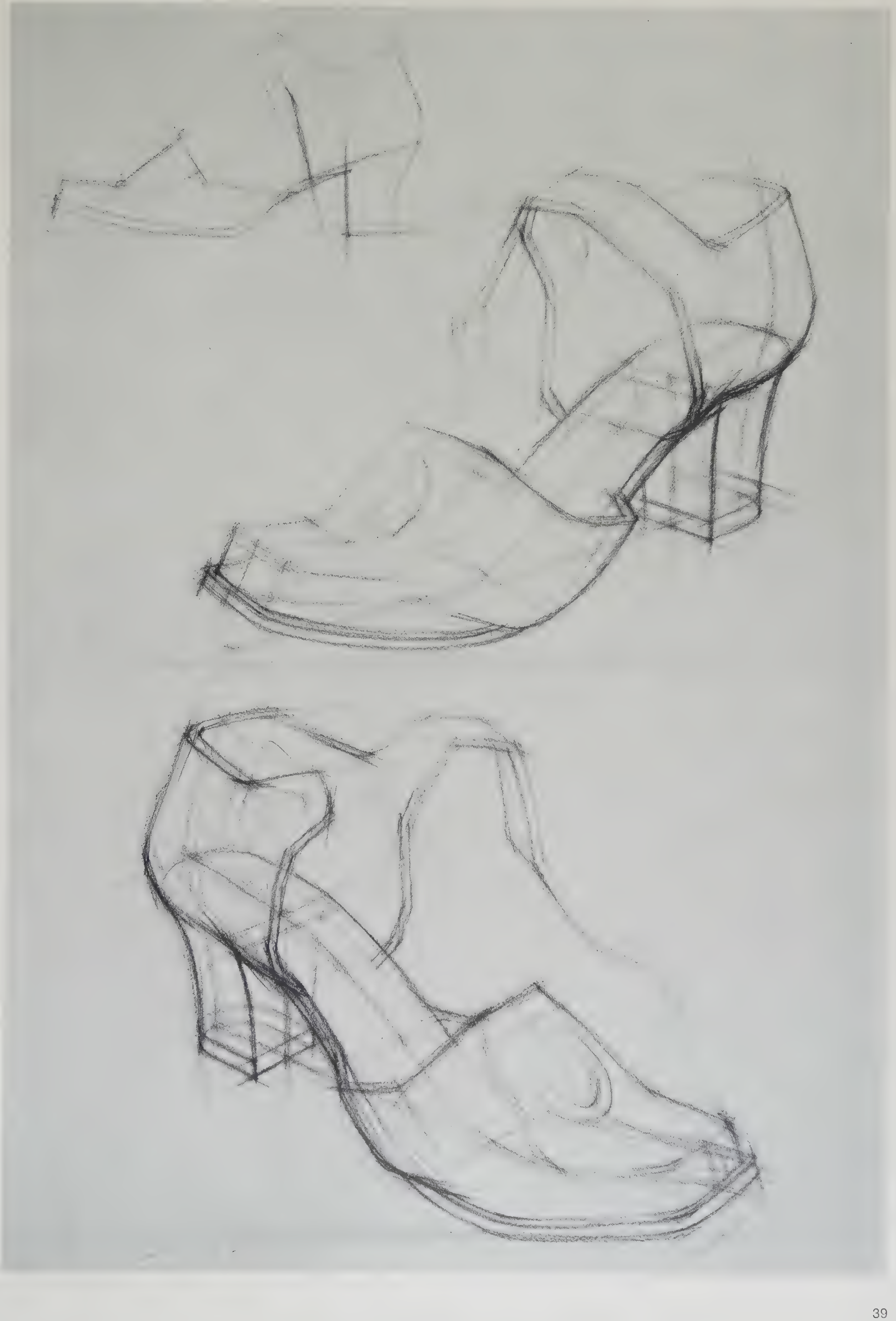
A comparison of both drawings clarifies the different linear formulations corresponding to the inherent character of the objects.

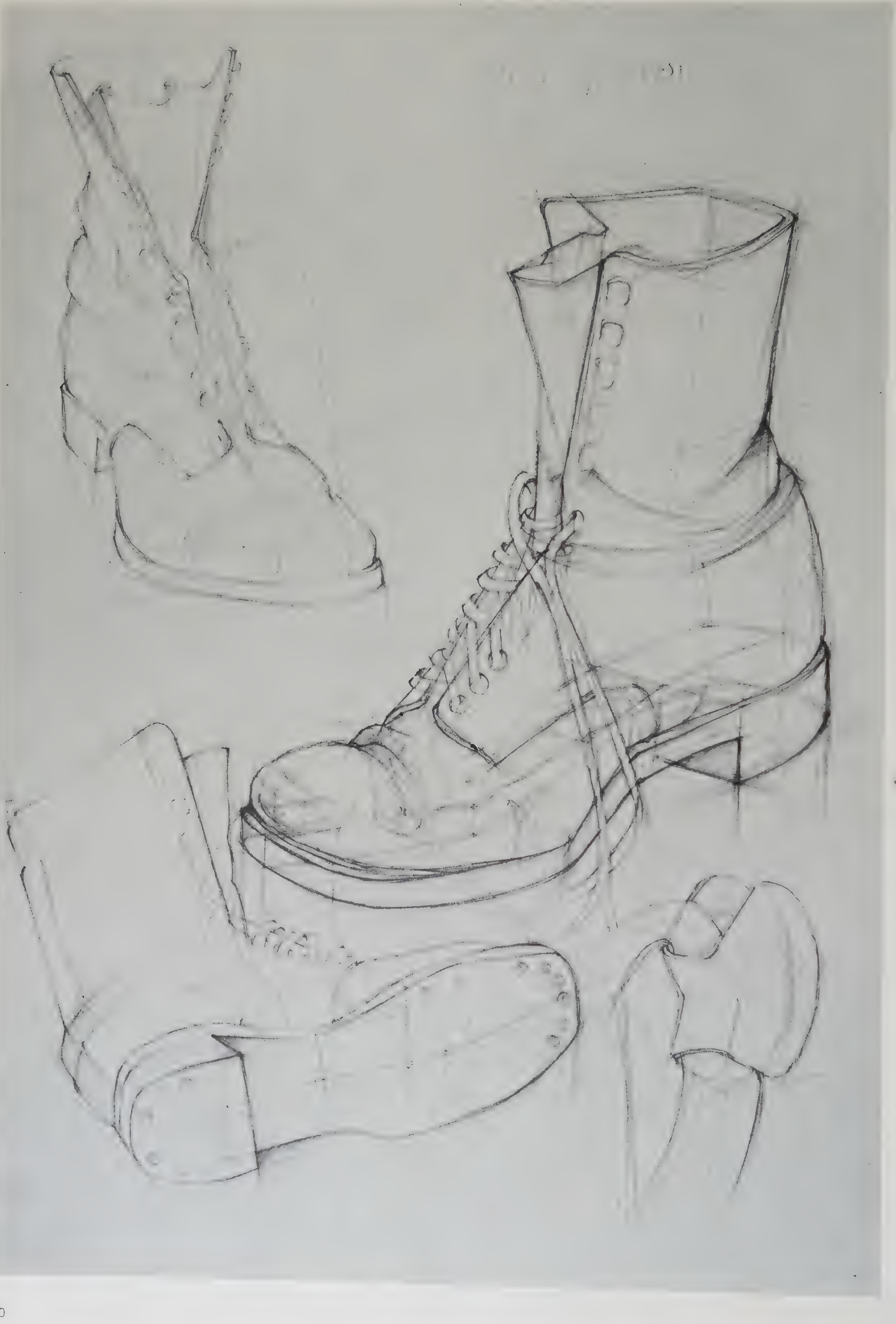




These four illustrations demonstrate the chronological stages of a drawing as well as the composition of the objects on the page.

To draw a shoe, one begins with a cubistic formulation, although most of the shapes are rounded and flow into one another; a faceted-crystal formation is avoided. The object is structured with transverse and lateral axes on the ground surface. The soft transitions of shapes are drawn with light, scattered lines. The shoelaces are drawn according to their movement in individual surfaces. The lines on the shadow side of the form are accentuated, while those on the lit side tend to fade.

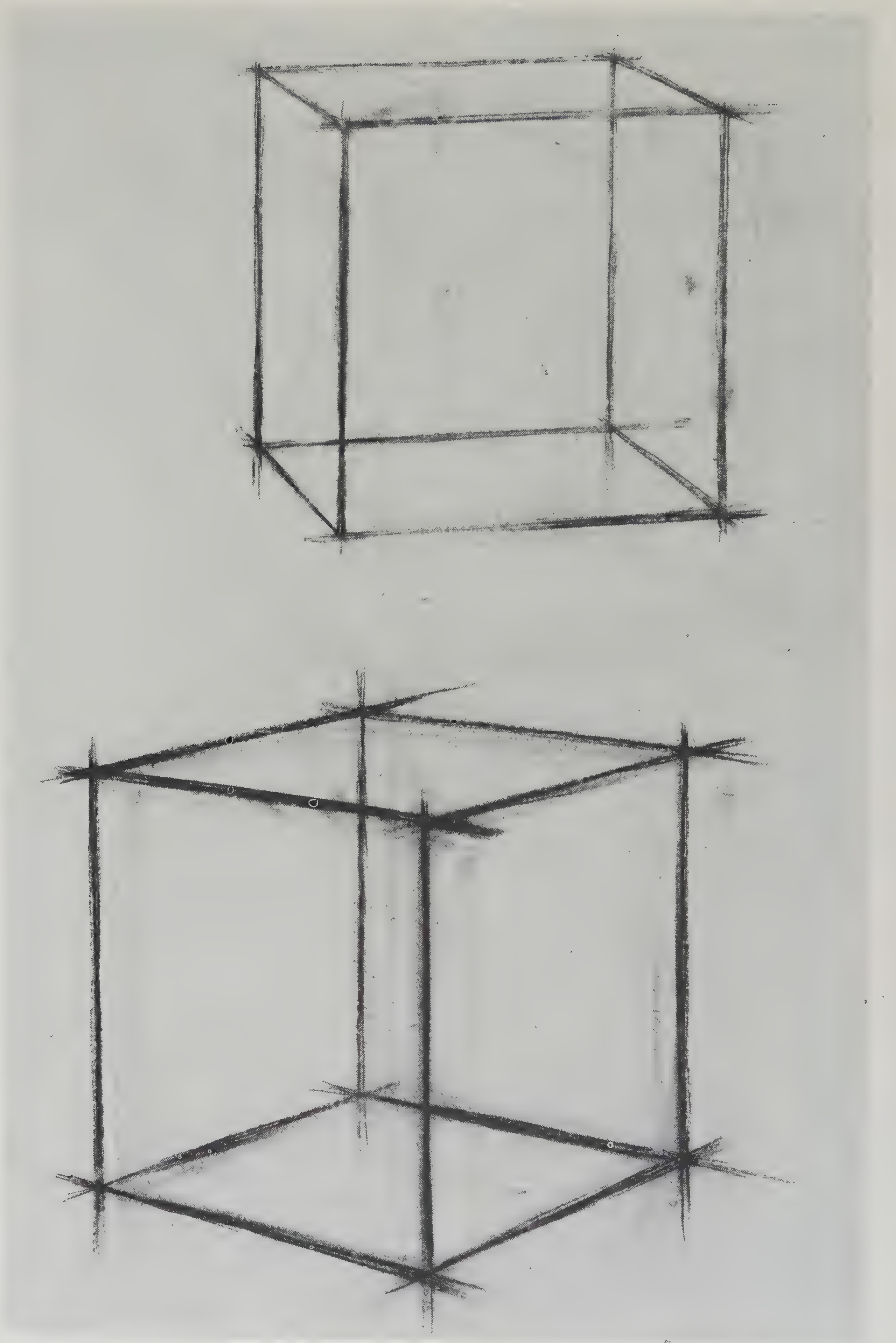




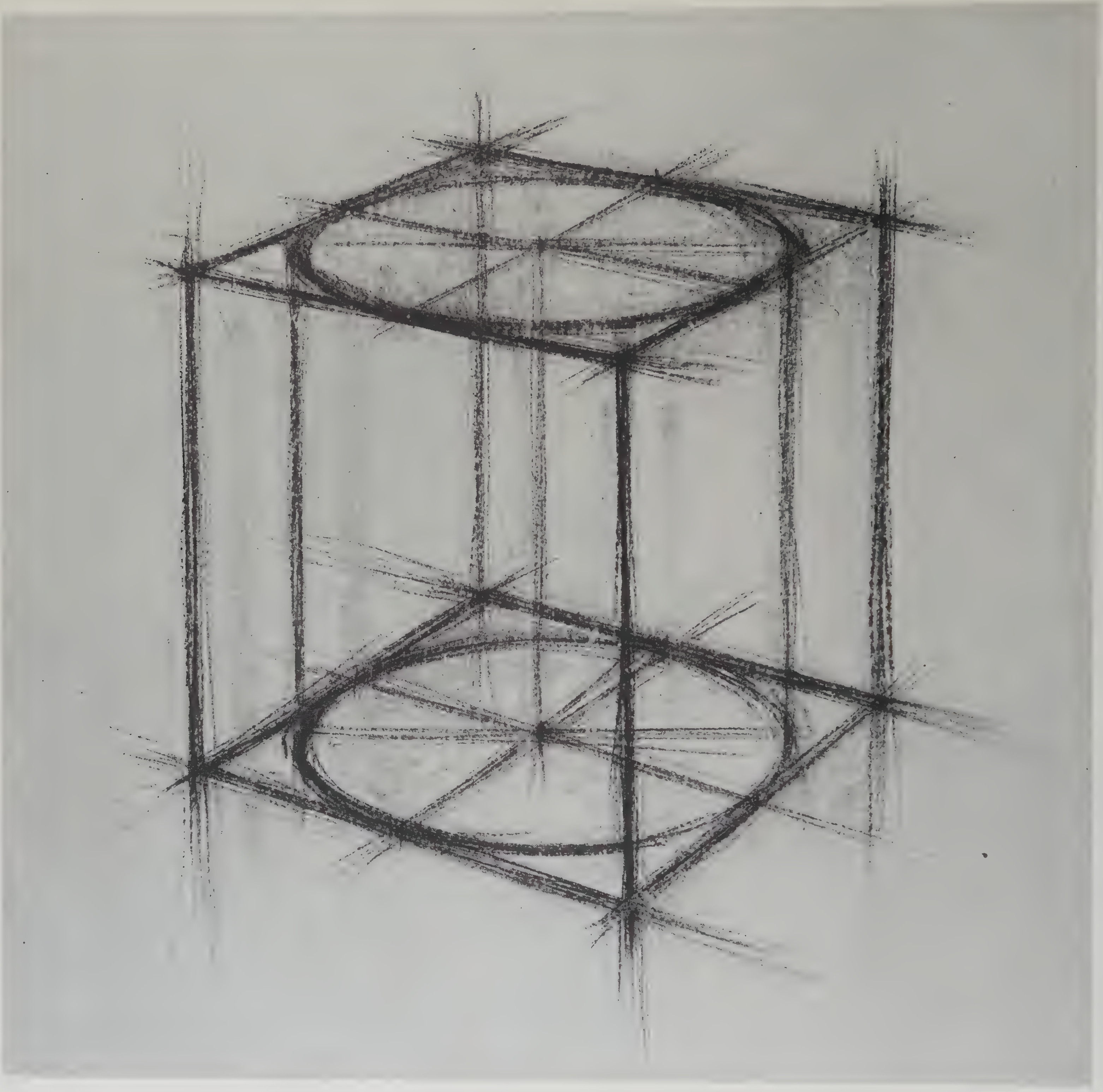
The subject matter of this course is basically identical to that of object drawing: the one difference is that objects for pictorial translation are larger. The combination of single forms (cubes, prisms, and cylinders) produces a composition in various dimensions; views from top and bottom are combined. The dimensional foreshortening of the forms is more pronounced in the drawing; the objects, some of which are constructed from linear elements, are transparent, and the overlapping shapes are visible. Overlapping shapes of solid forms must be imagined.

In the beginning the class works from the same model situation that offers different spatial relationships according to each student's location. The entire area of the drawing paper (slightly larger than 42 × 59.4 cm) is used for each study. After the foundations of the geometrical objects have been mastered, the students draw from plaster models (capitals, pedestals, gargoyles, and consoles), most of which are derived from the Basel Cathedral (late Romanesque and Gothic styles). Exercises in museum drawing are conducted in the Melanesian and Central American rooms at the Ethnological Museum in Basel. The objects studied are cult figures, ancestral statues, masks, and impliments of wood, stone, or clay.

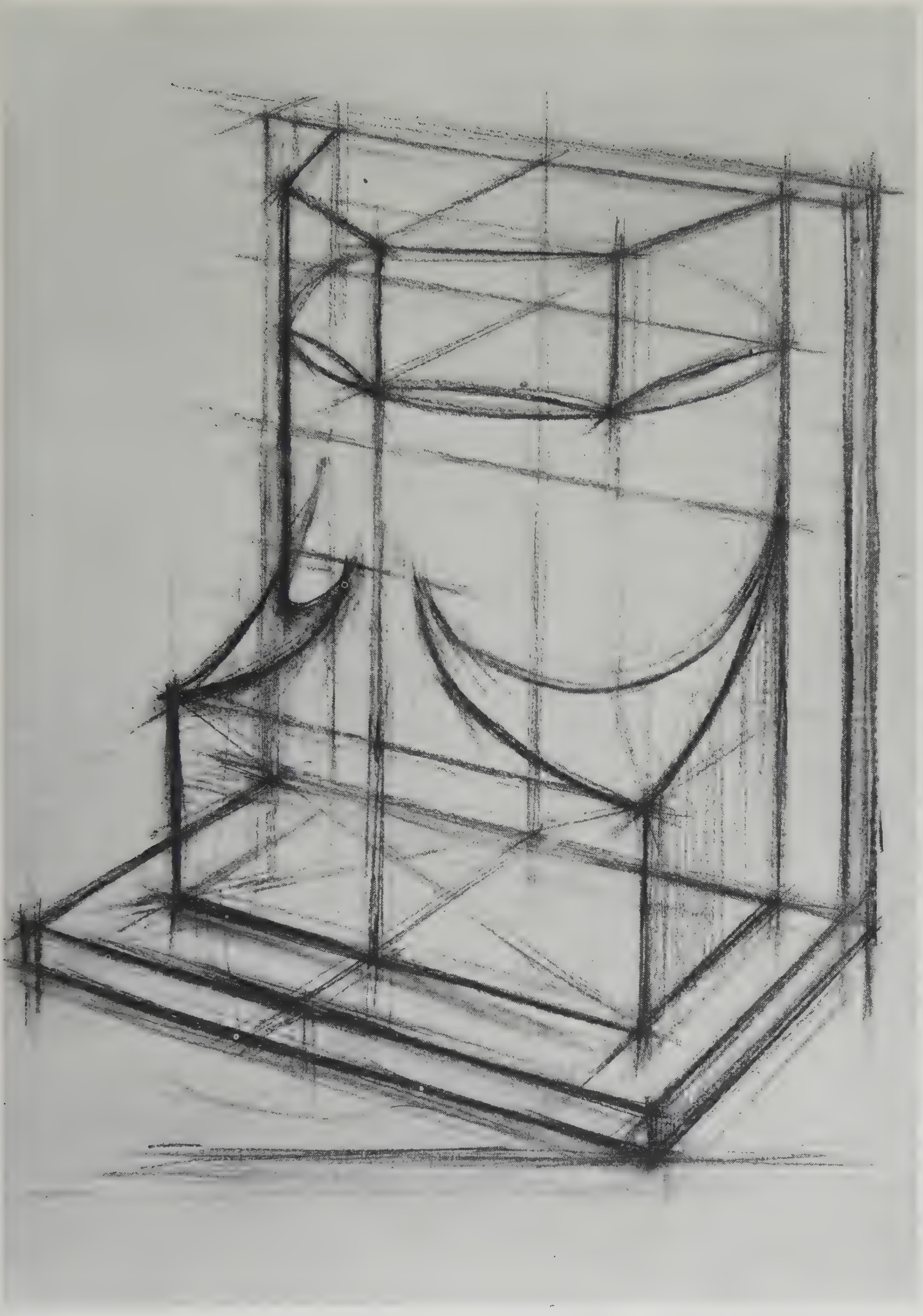
These figures and changing the drawing material to charcoal on toned paper – allow for an expressive, intuitive interpretation of the objects. Charcoal is soft, tonal, and easily erasable and requires a free, rhythmical drawing technique. Tones become an integral part of the drawing. In the museum the students are left to their own resources and work independently: they usually draw at an easel. The student-teacher relationship is limited to an individual consultation. The students are instructed to develop clearly the linear-spatial character of the objects.



The drawing foundation is achieved in the first weeks of classes by studying objects whith cubic structures. Exact observation of proportions and angles is taught, together with clear linear execution. The objects are placed on the floor and drawn from a position overlooking one corner.

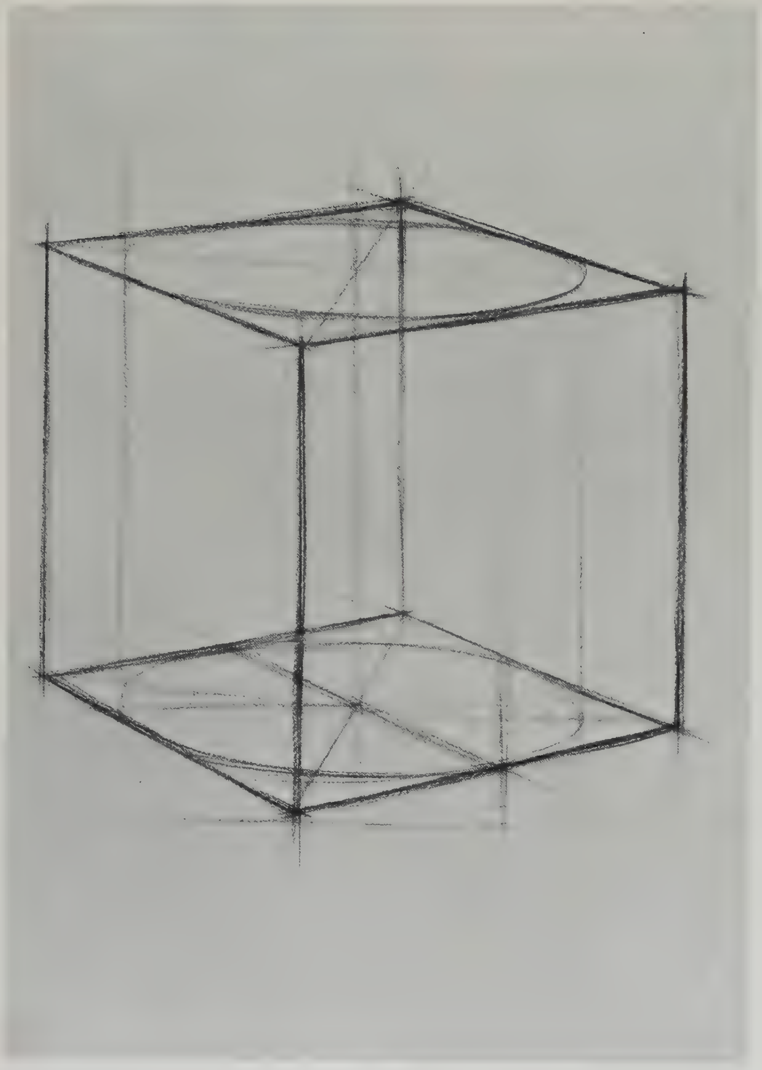


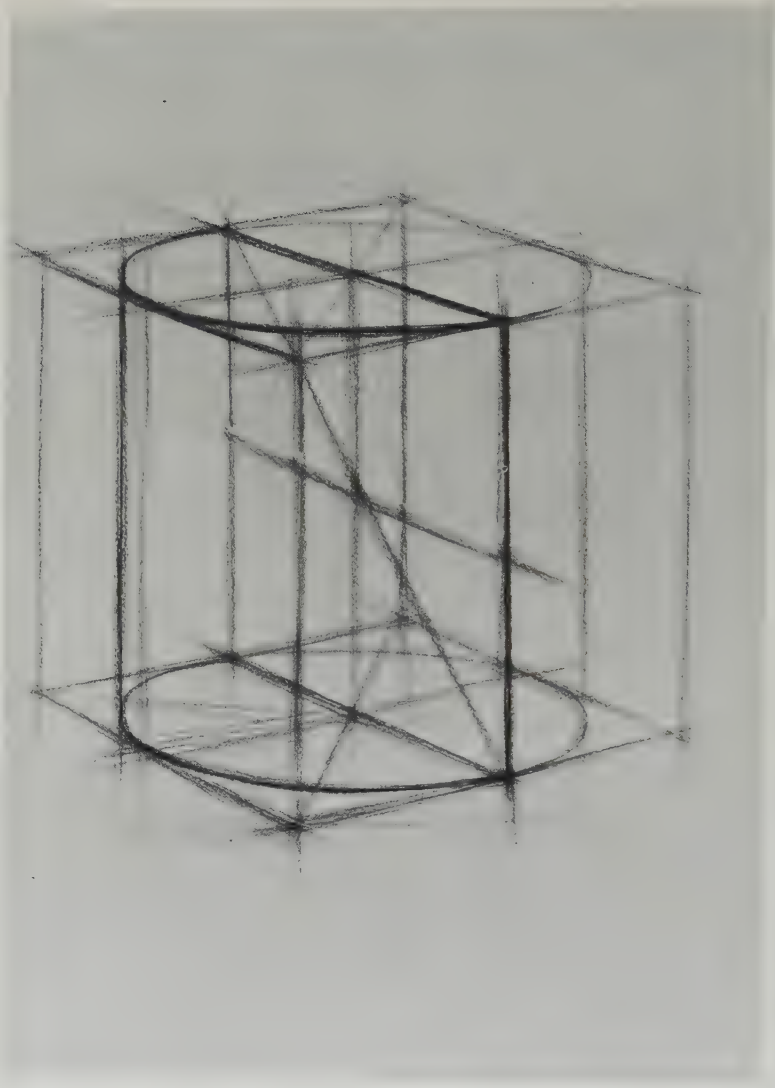
A drawing of a foreshortened cube is examined by inserting a foreshortened circle: the dimensions are correct if the longer diameter of the ellipse is horizontal, because the eye always interprets a foreshortened circle as an ellipse with a horizontal axis. The two ellipses are joined with vertical lines to form a cylinder.



Drawings from objects such as this plaster copy of a wall pedestal expand the student's ability to represent complex shapes that are strongly geometric in character.

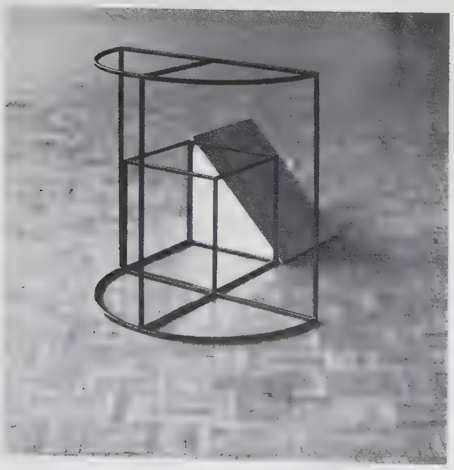
Advanced students draw objects that are placed on rolling platforms, boxes of different heights, adjustable object stands, or hung on the wall. All the facilities are extremely mobile.

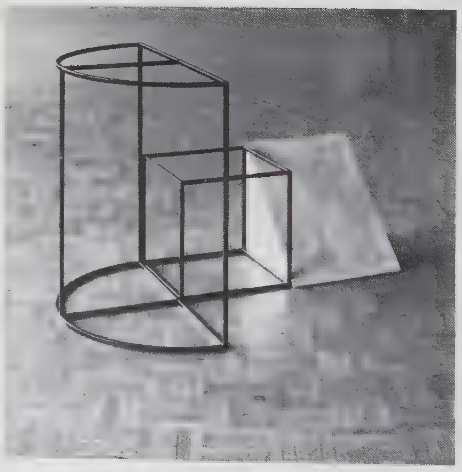


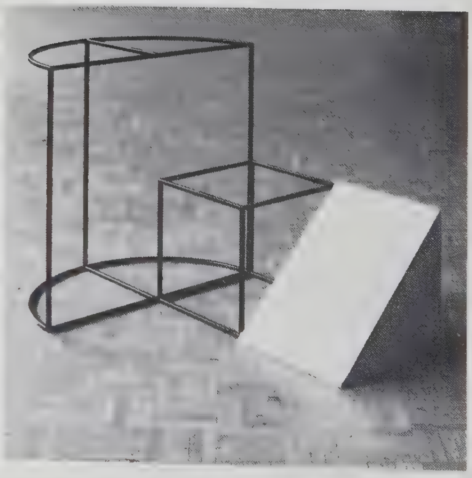


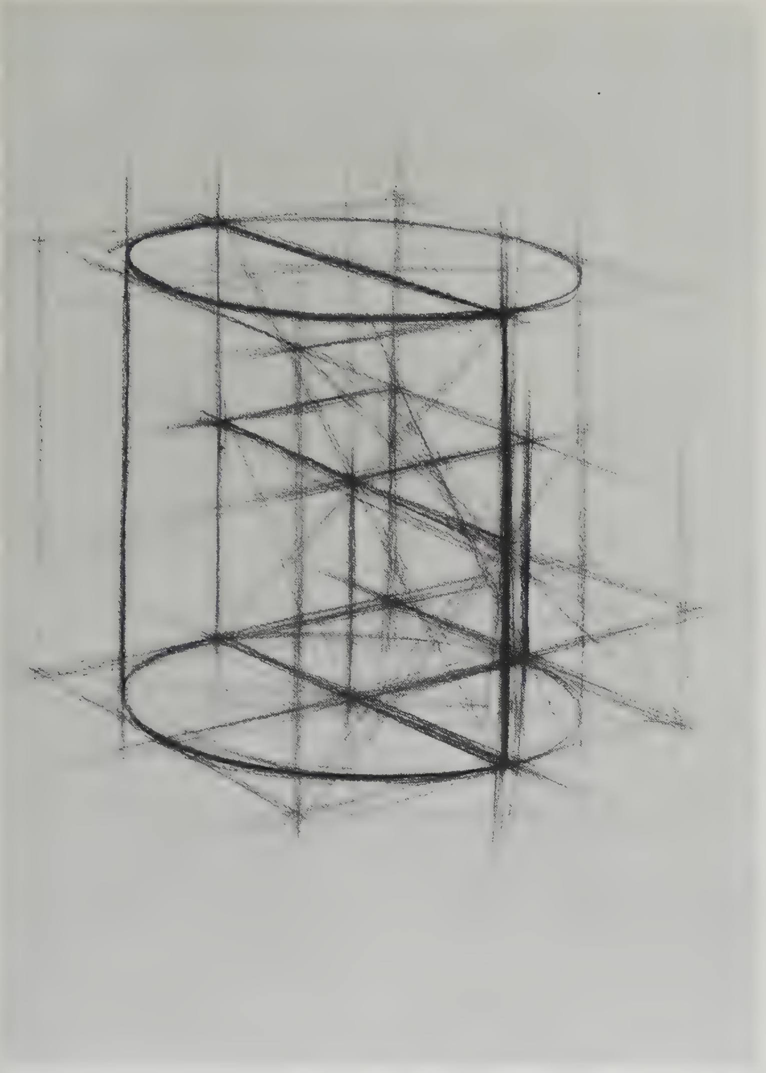
The structure of this still-life drawing starts with a cube, cylinder, half cylinder, small cube, and triangular prism, the result of dividing the cube. Overlapping forms and objects are distinguished with careful accents; elements remain that reinforce the structure of the drawing.

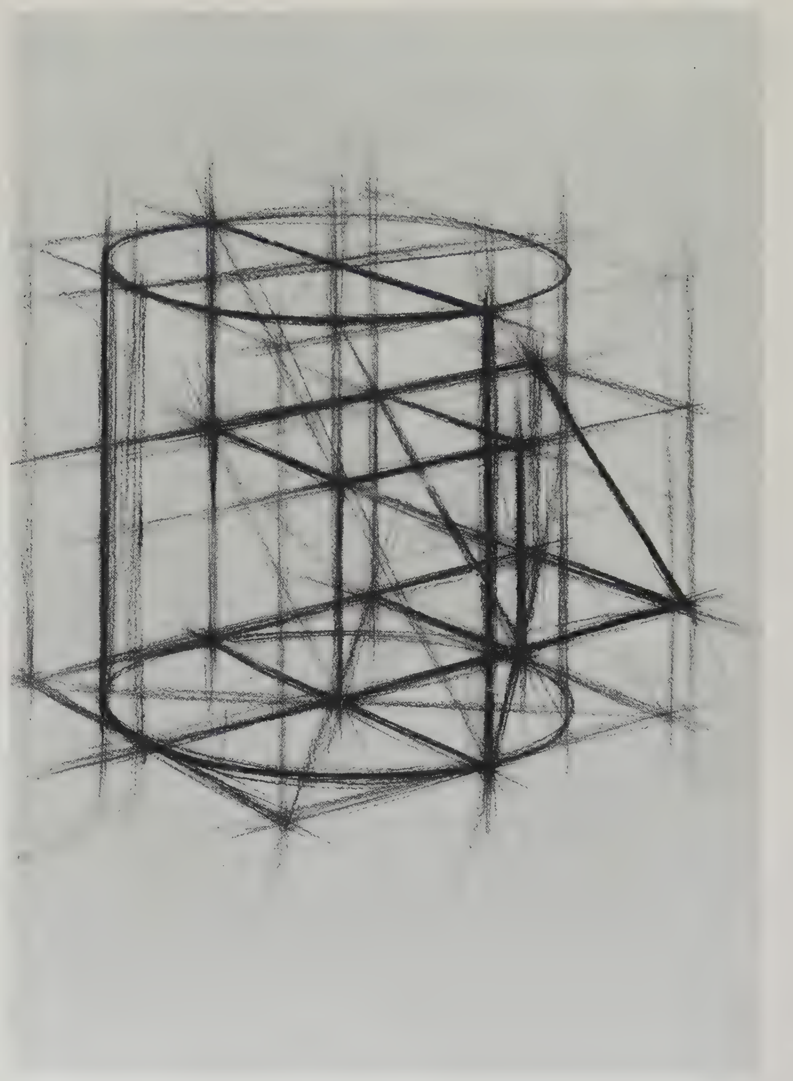
The students observe the same still-life group from different positions. The height of the half cylinder is 60 centimeters. The transparency of the objects, which are made of metal rods, allows for exact observation, comparison of shapes, and control of overlapping lines.



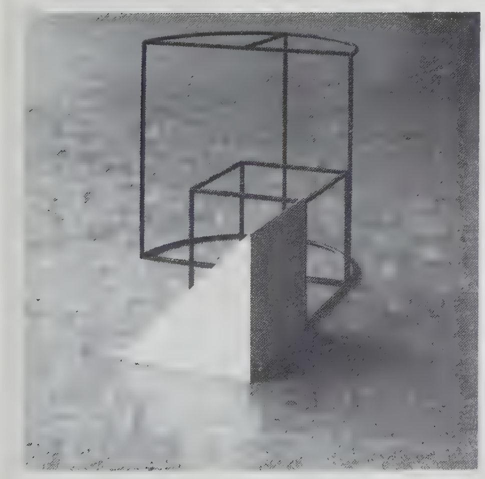


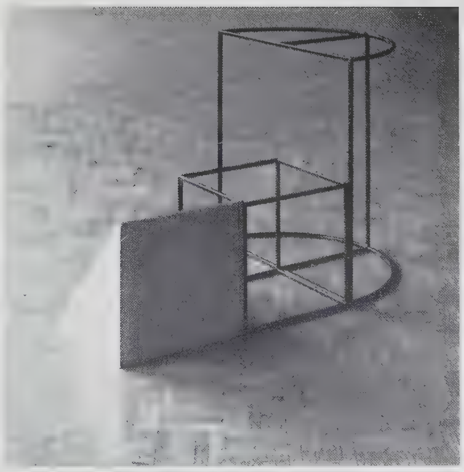


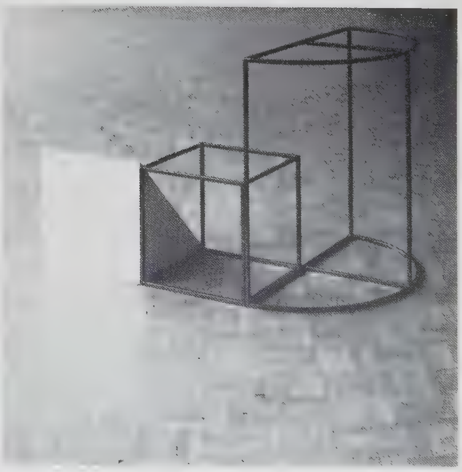


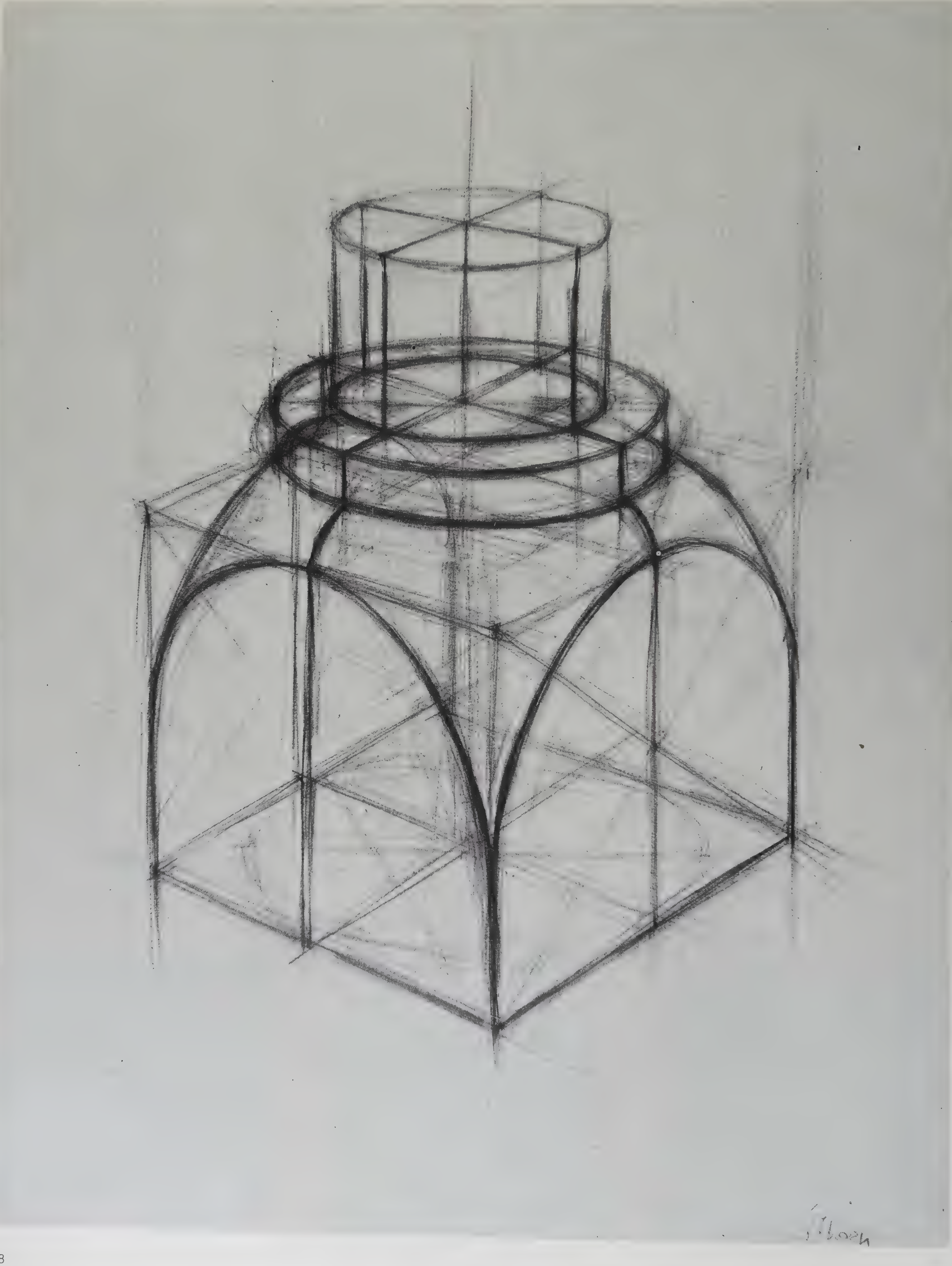


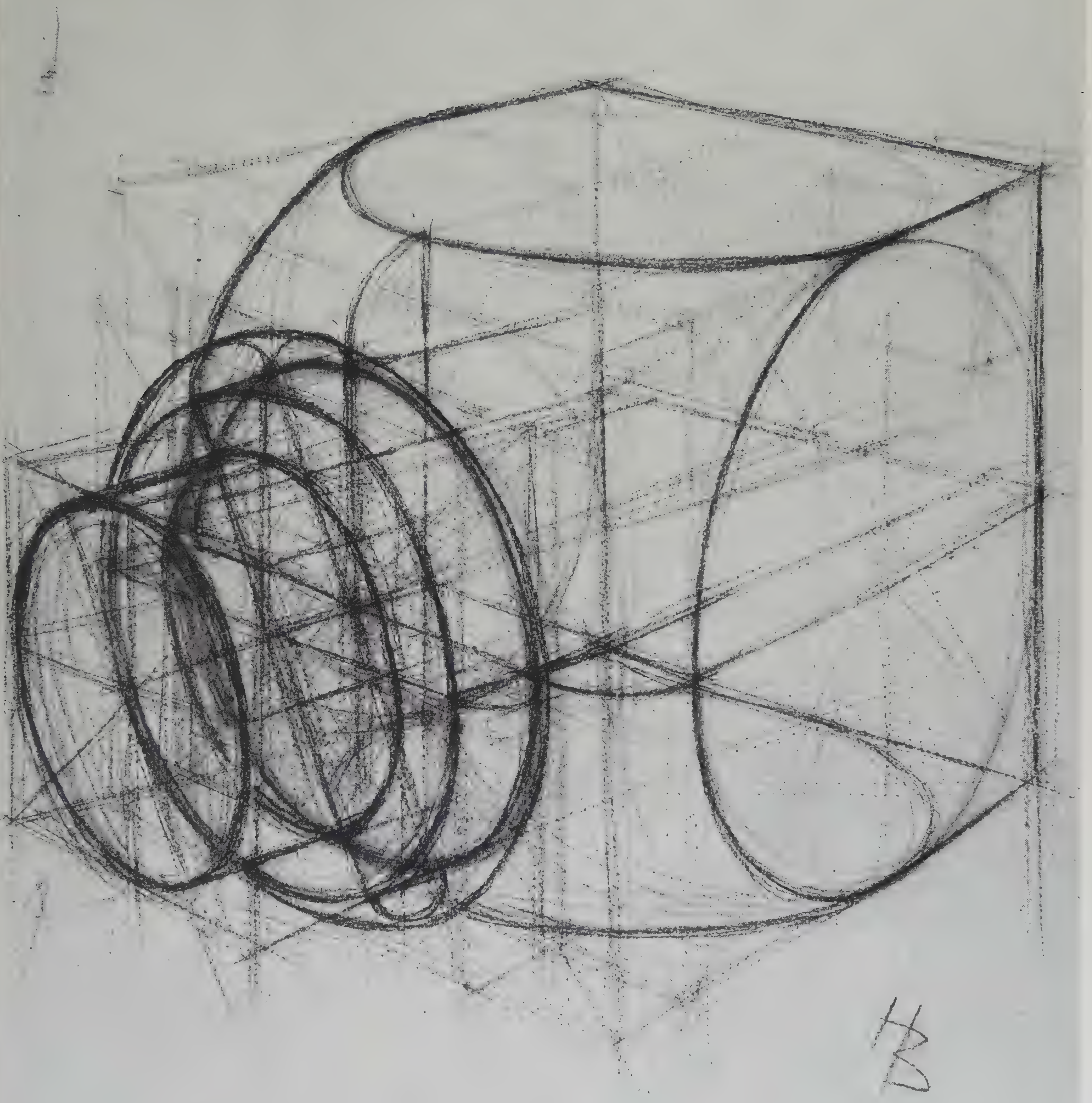
The square Roman capital shown on the following two pages contains different geometric shapes: cube, half sphere, ring cylinder, and cylinder. The construction of the arched surface is based on cross sections. Sensitive linear accents strengthen the dimensional impression of the drawing.







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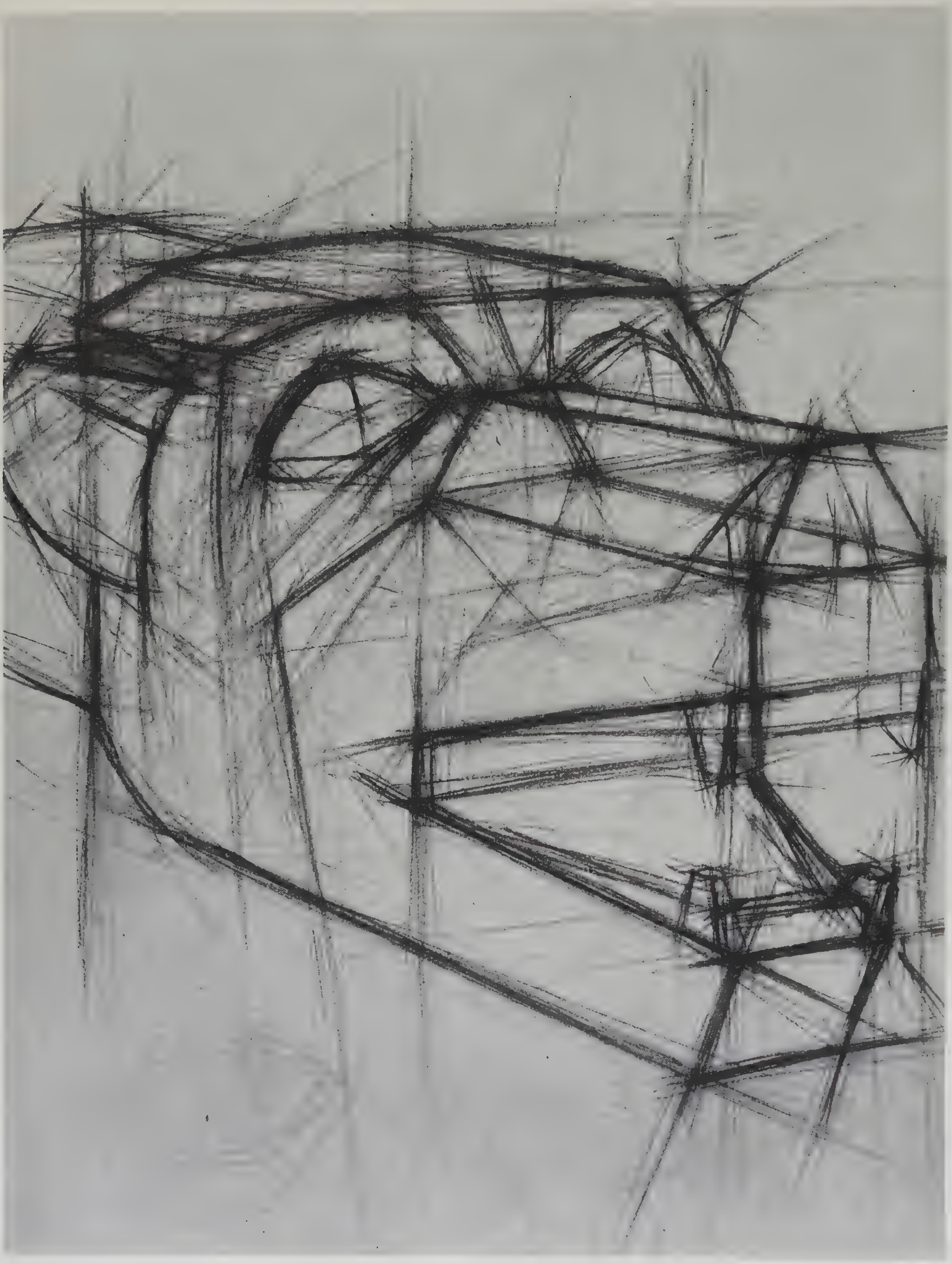
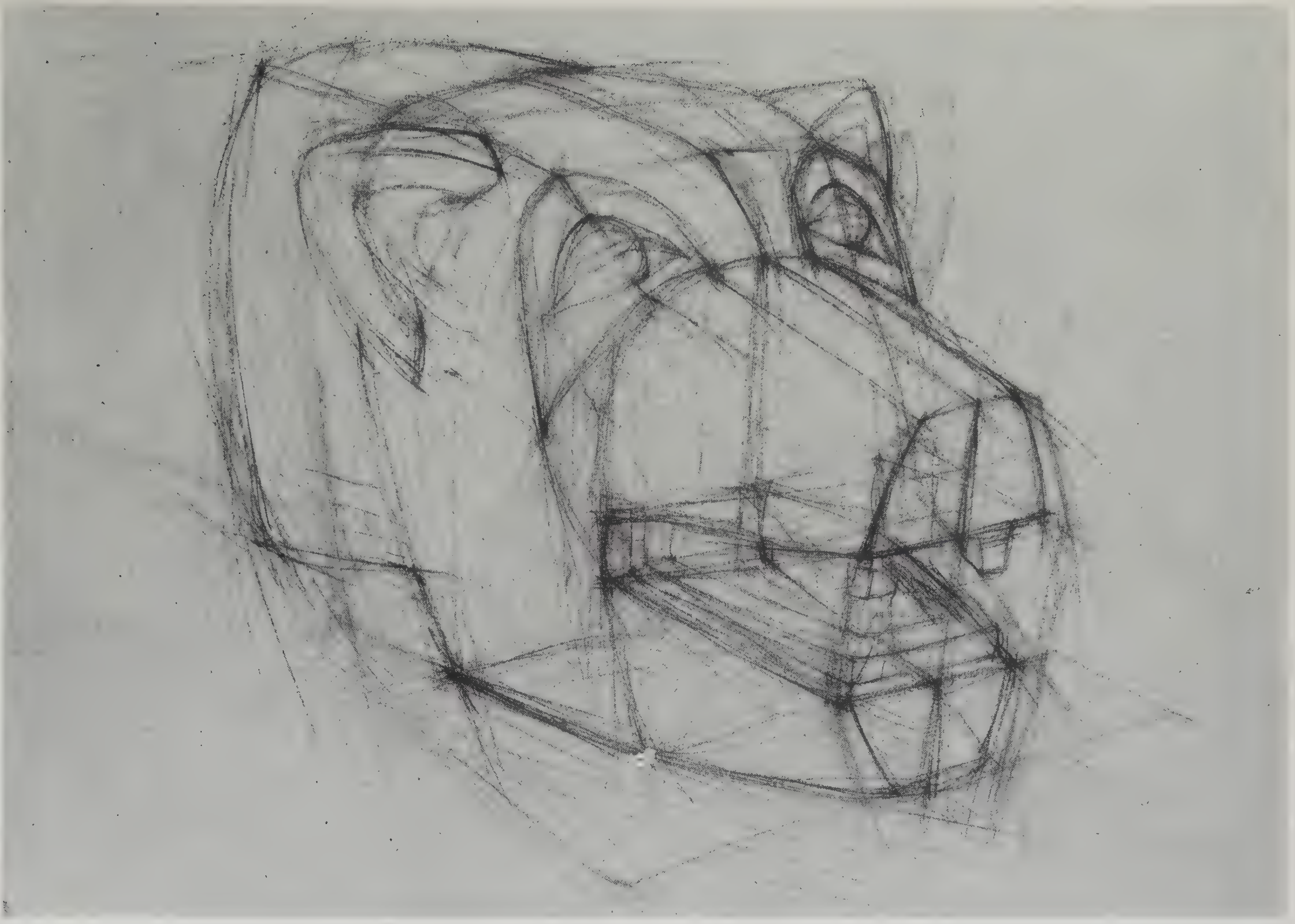
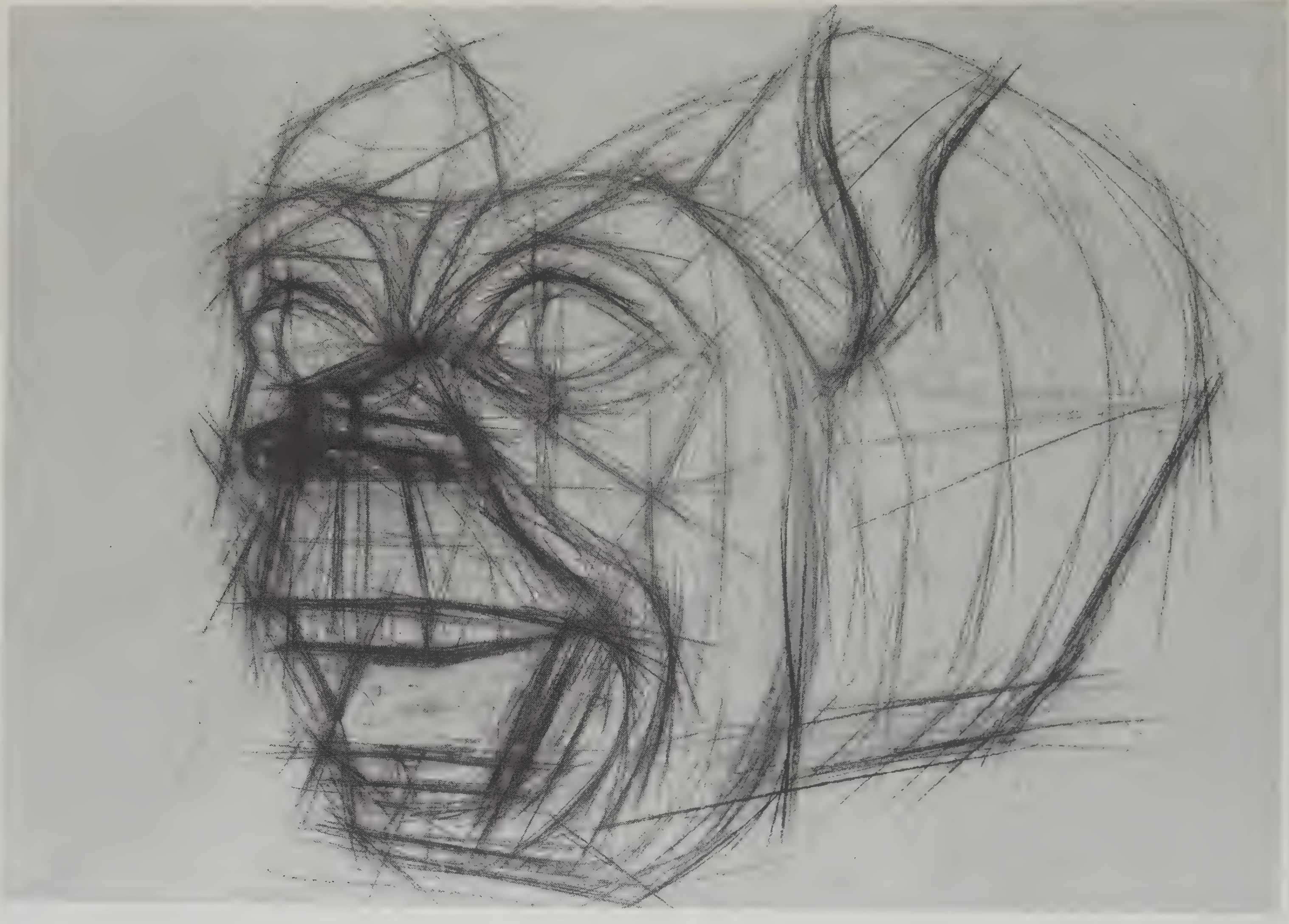


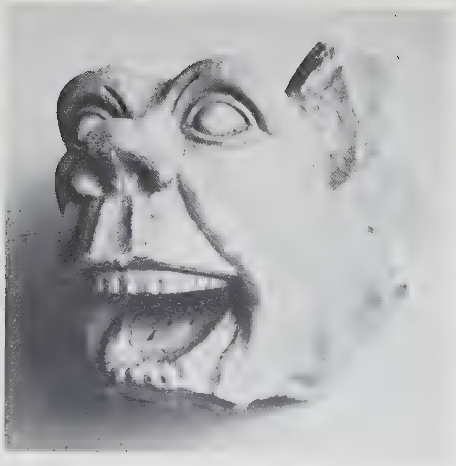
Although the forms of this figure are very simple and strong, its pictorial translation is very difficult for the students, since the surfaces do not have clear boundaries and flow into each other. The first drawing, simplified into geometric forms, is extremely expressive. The figure is handled with a more restrained impression in the second drawing.

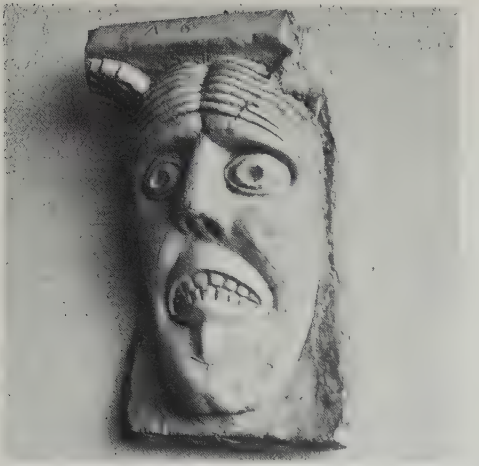


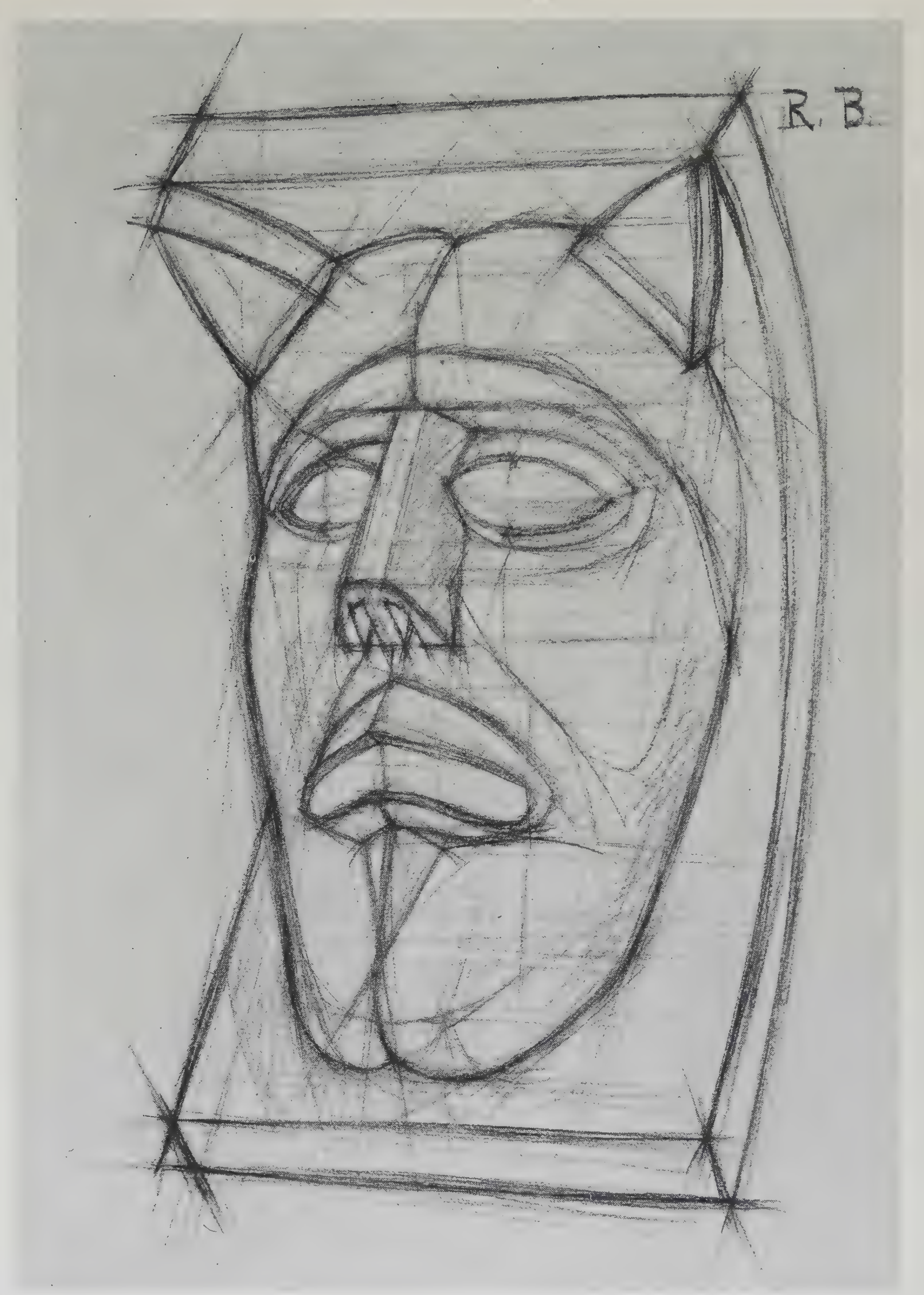
The figures shown here and on the following page are plaster models of gargoyles from the Basel Cathedral. Most of the originals are situated at great heights and cannot be drawn on location.



Fluid transitional surfaces of curved forms are resolved in many single lines freely and delicately rendered in charcoal. The form is clarified by inserting accents. The aim of the drawing should not be sterile perfection: small mistakes are acceptable if the work is convincing and lively.

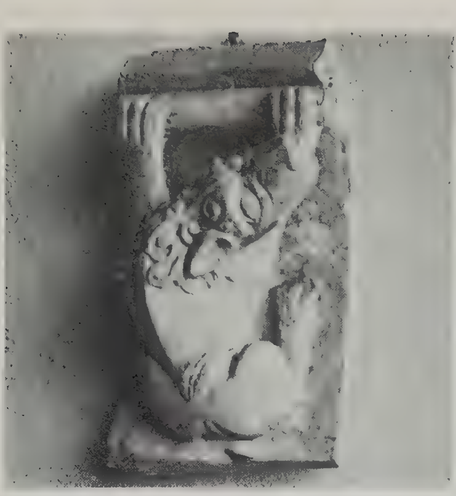


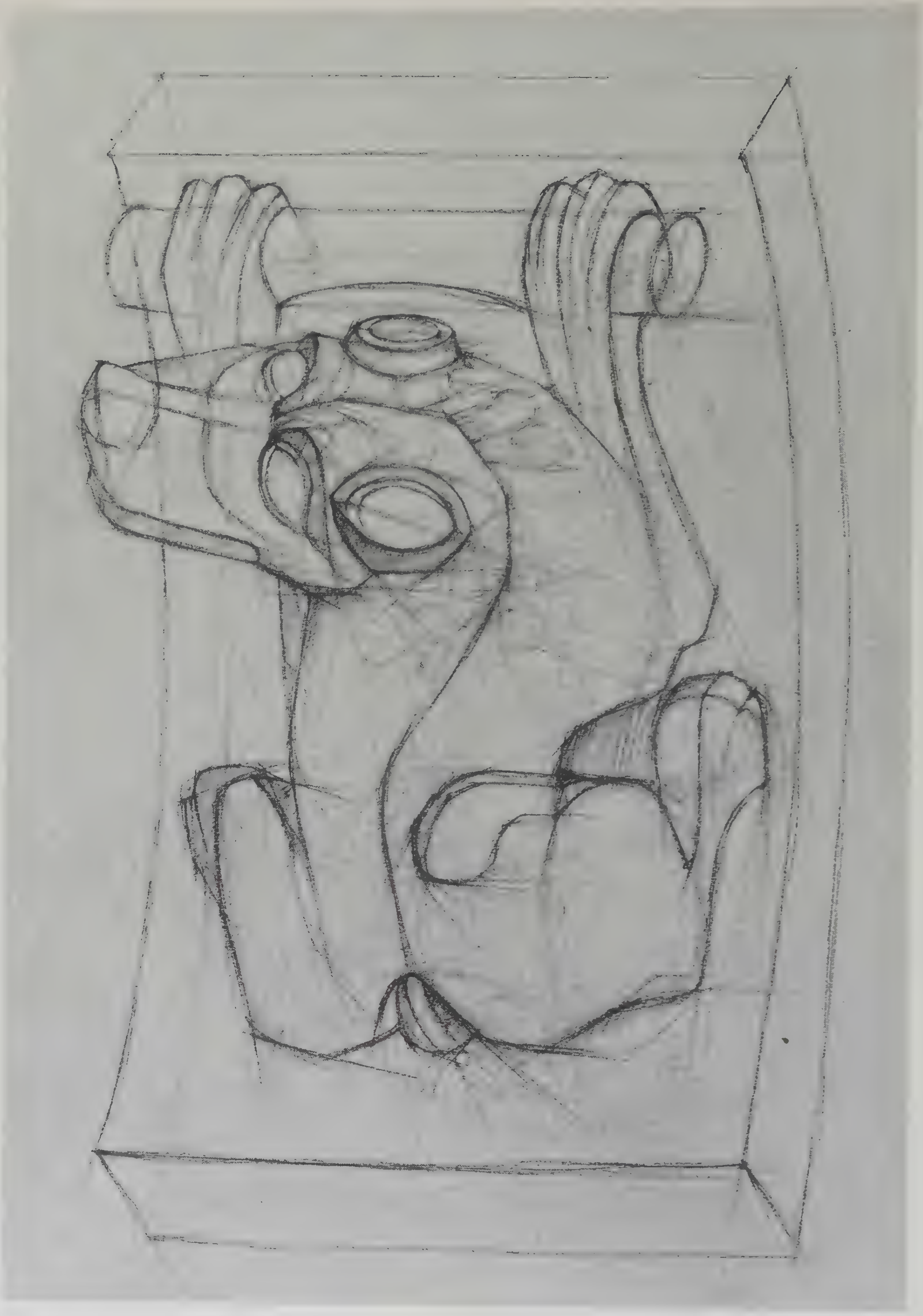




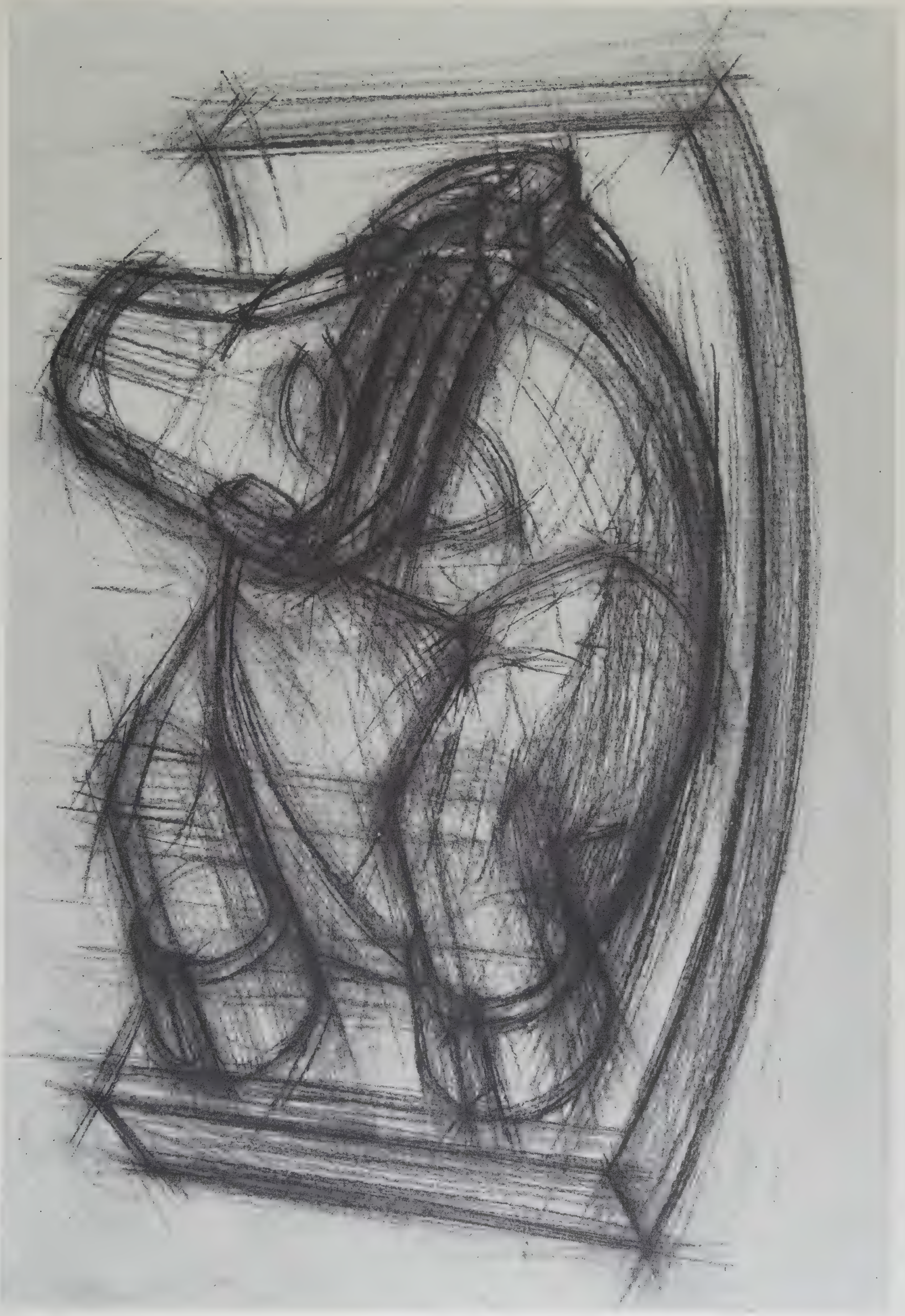
The expressive models shown above and on the following page are plaster copies of Romanesque consoles in the chancel of the Basel Cathedral. They introduce the students to medieval European sculpture.

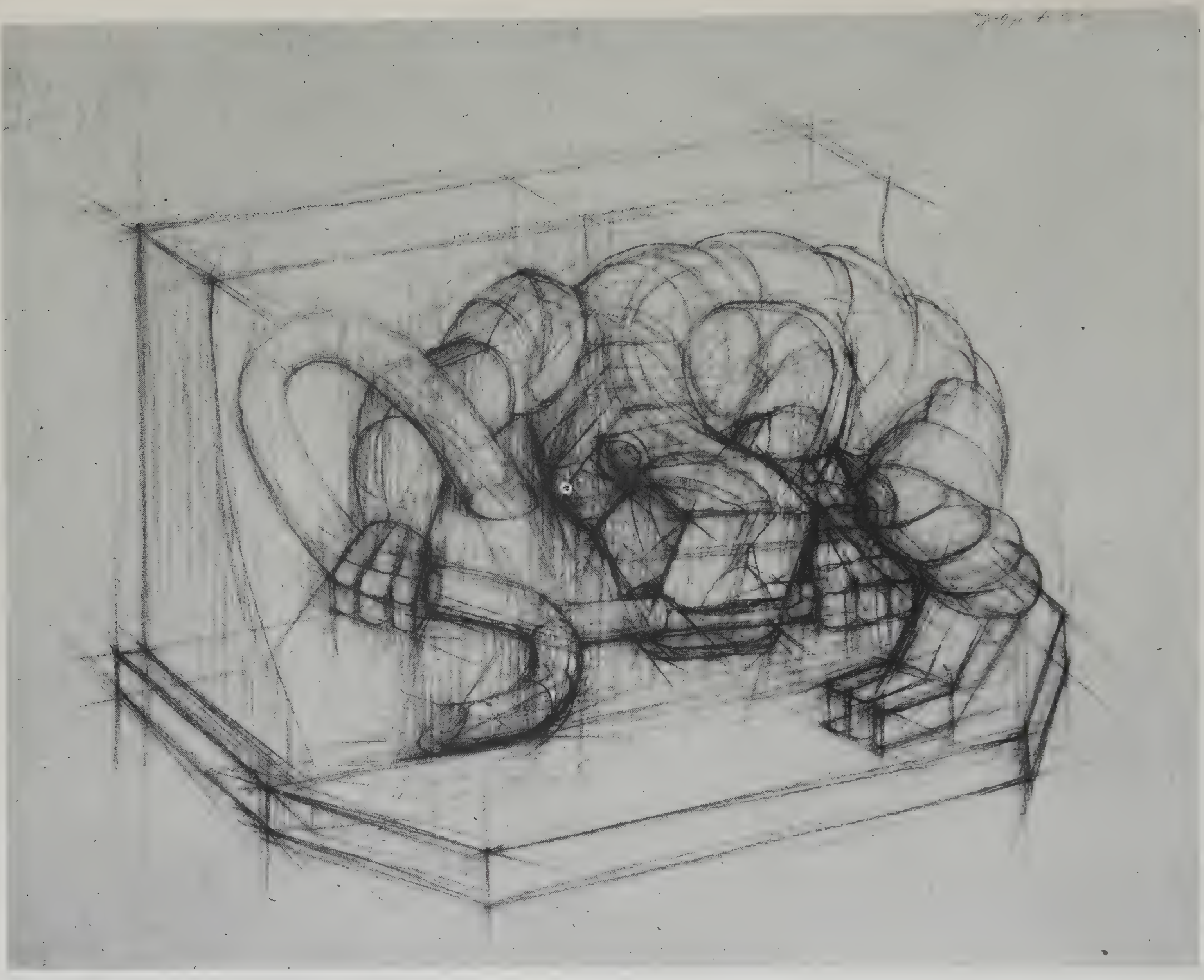
The sculptural effect of a drawing can be supported by using light tones as inherent shadows. The tones must be subordinate to the linear drawing and should never create the impression of a light-and-shadow study.





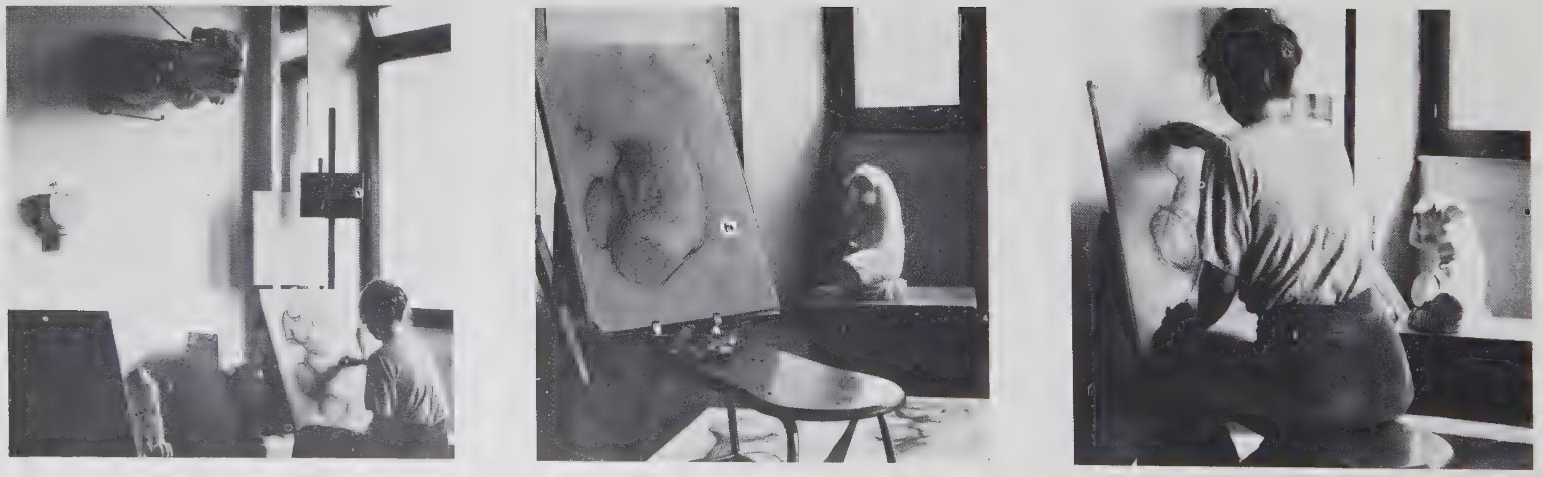
Both drawings clarify the difference in interpretations and formulation of the figures at the top left. The drawing on the left is structured carefully; the drawing on the right is more spontaneous and freely drawn.

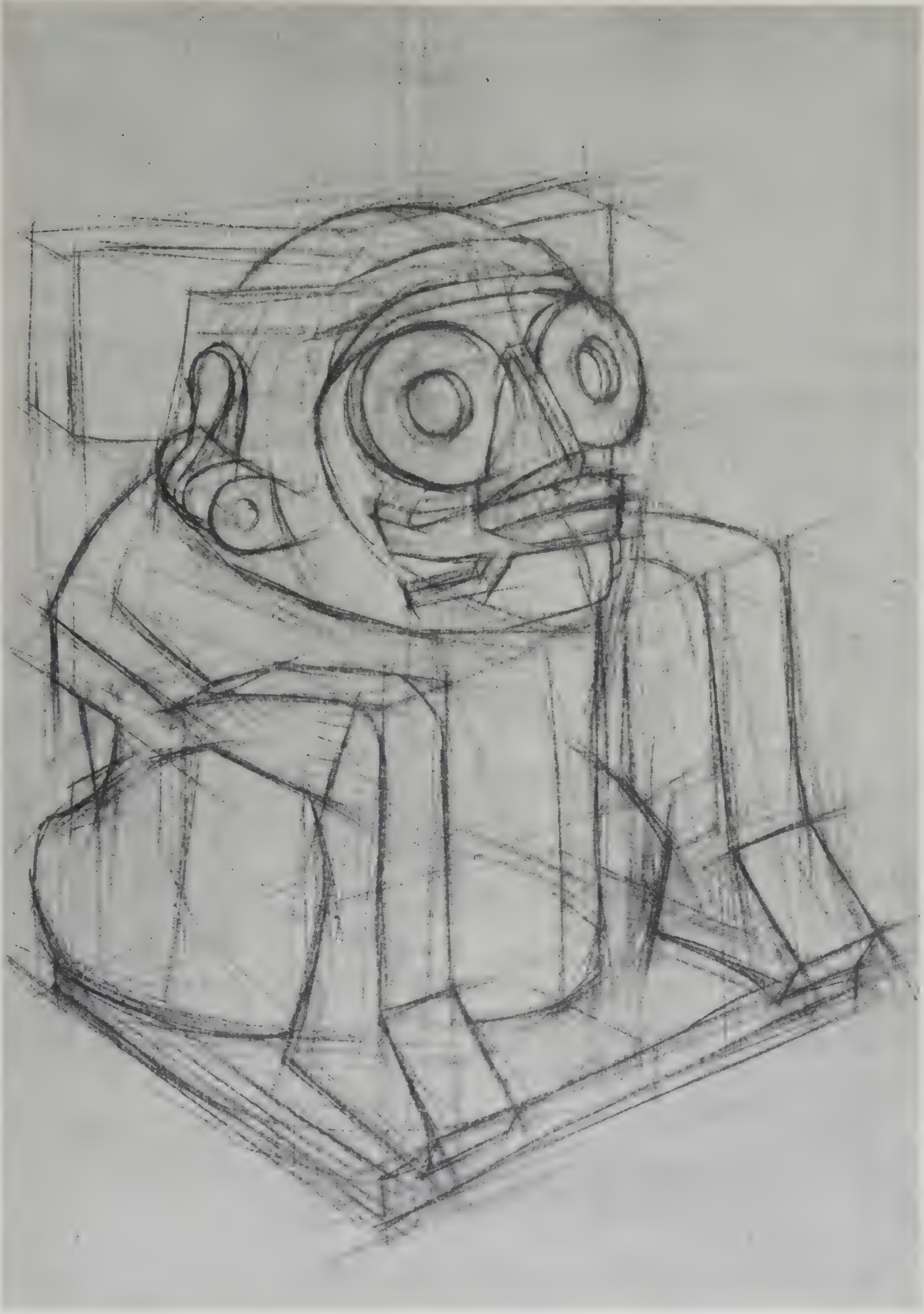


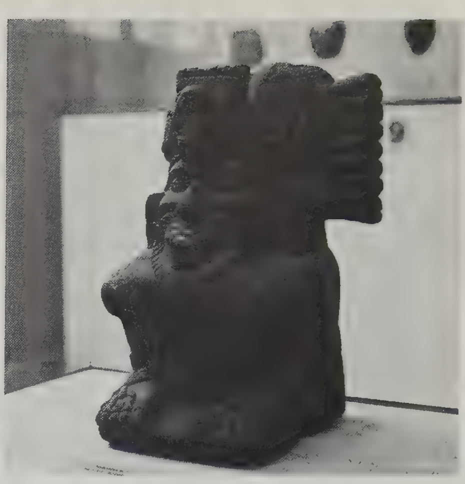


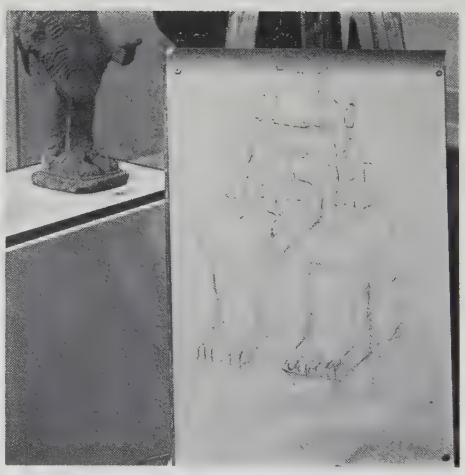
In this clearly structured and differentiated drawing from a plaster copy the spatial effect is modulated through different linear values.

The three photographs show the working situation, a student at work, and the correct working position.





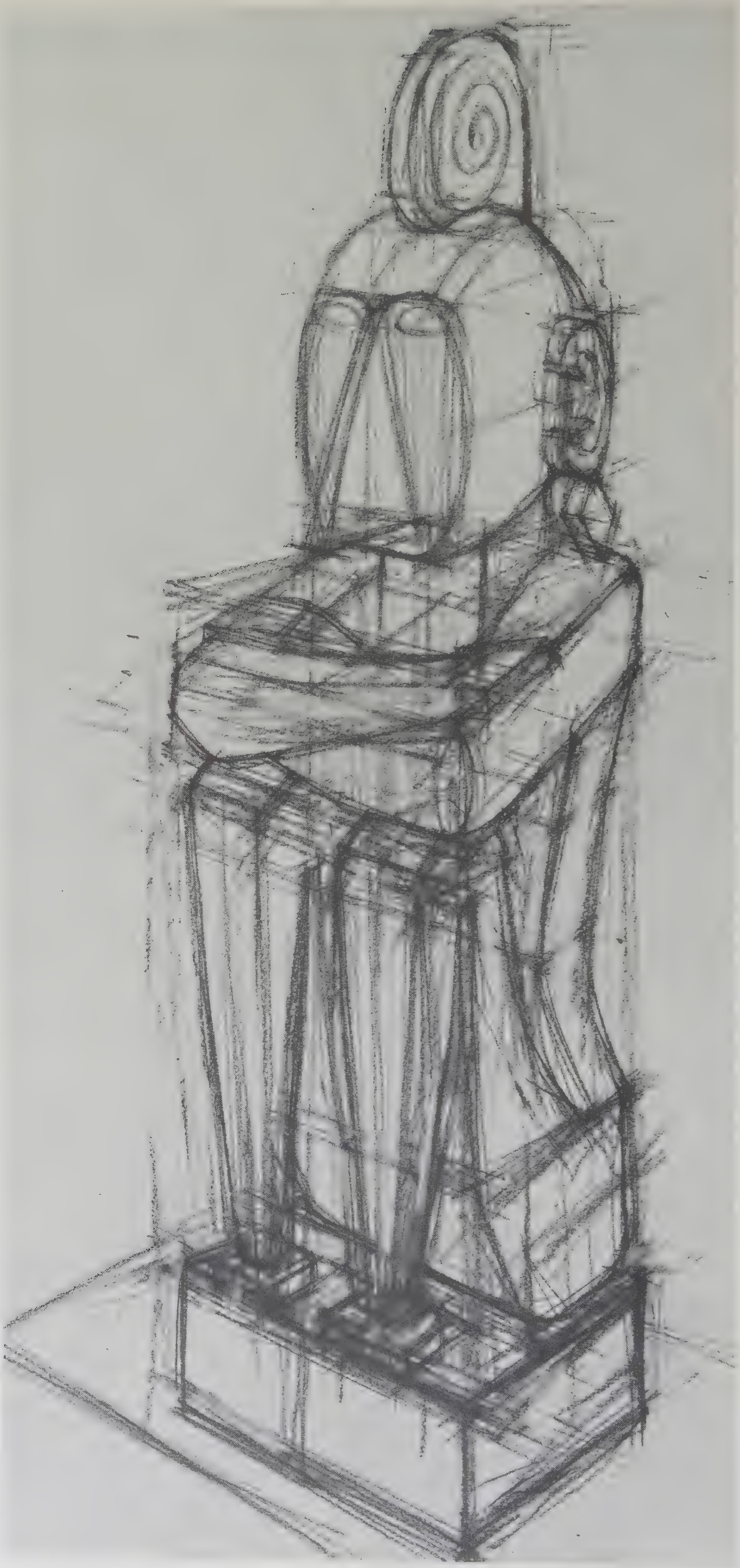




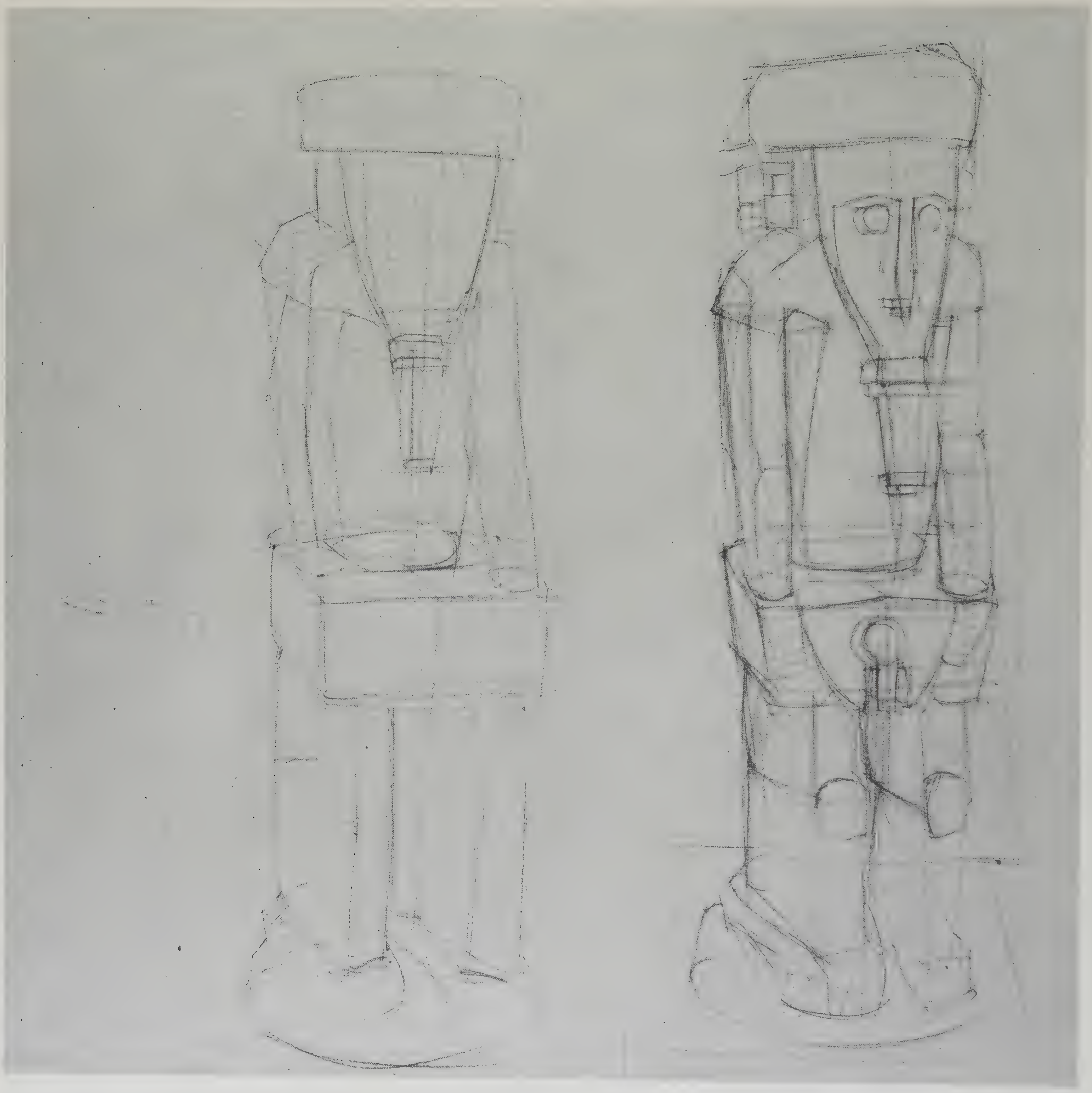
Students work on easels in the museum. The majority of the figures are protected in glass cases.

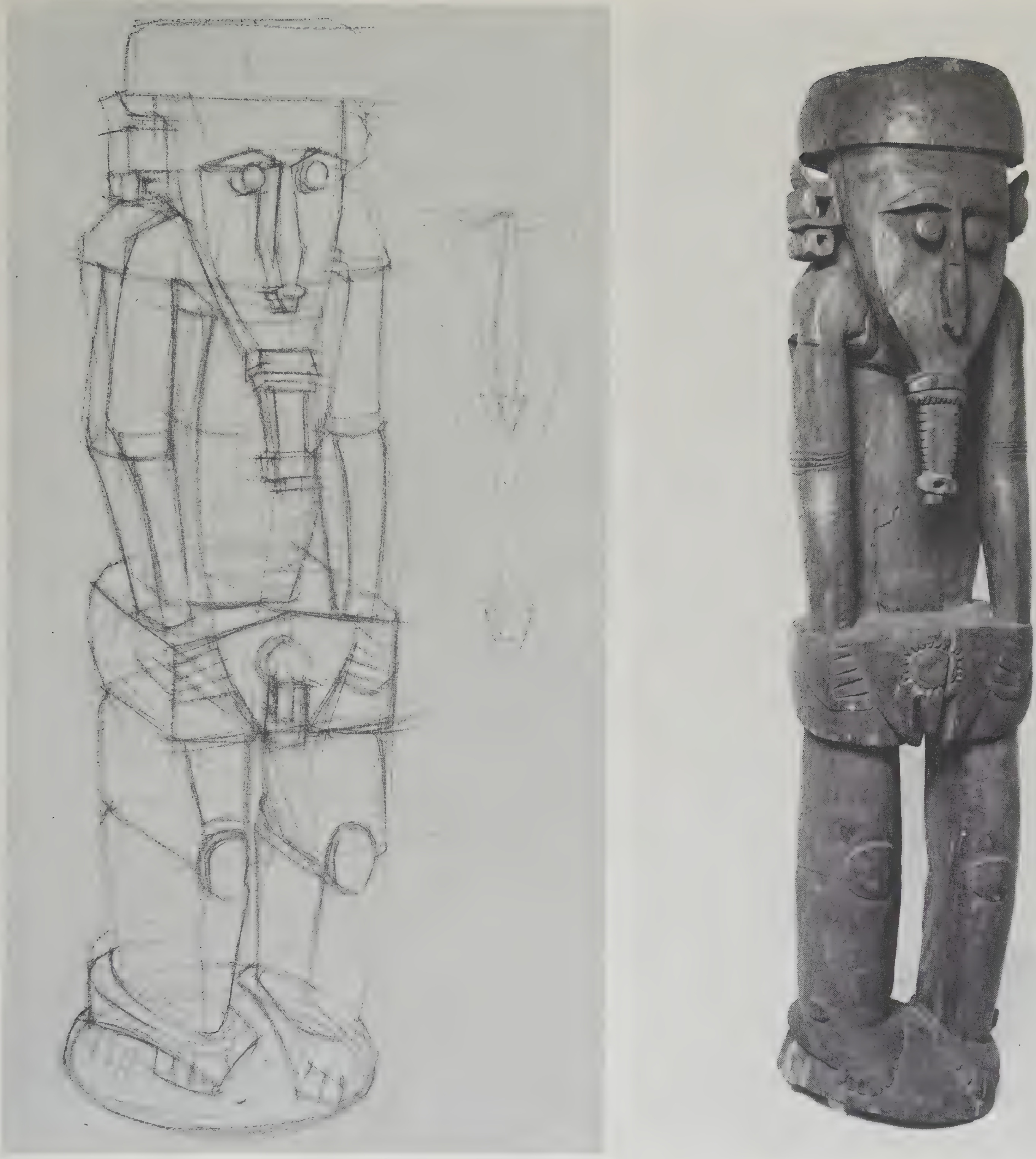
Sculpture from pre-Colombian America, the formal structure of which is similar to Romanesque sculpture, makes the transition from object to museum drawing.

In the Museum

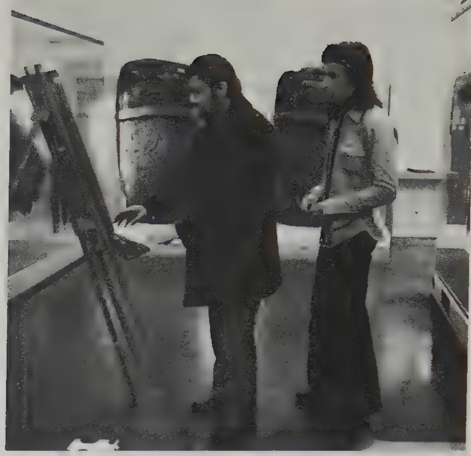


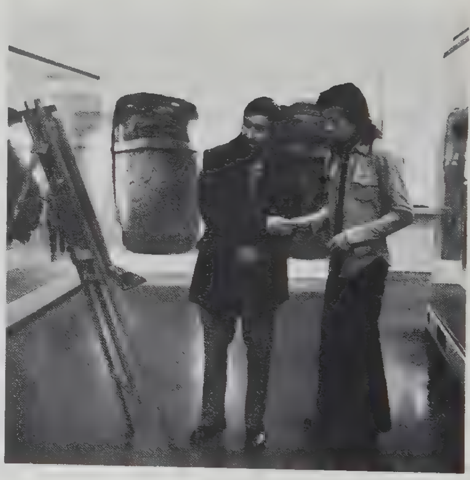
In both drawings the pictorial translation of the complex wood figure is drawn in a concise form with careful but bold lines. The surrounding space and the position of the figure should be indicated with a few lines.

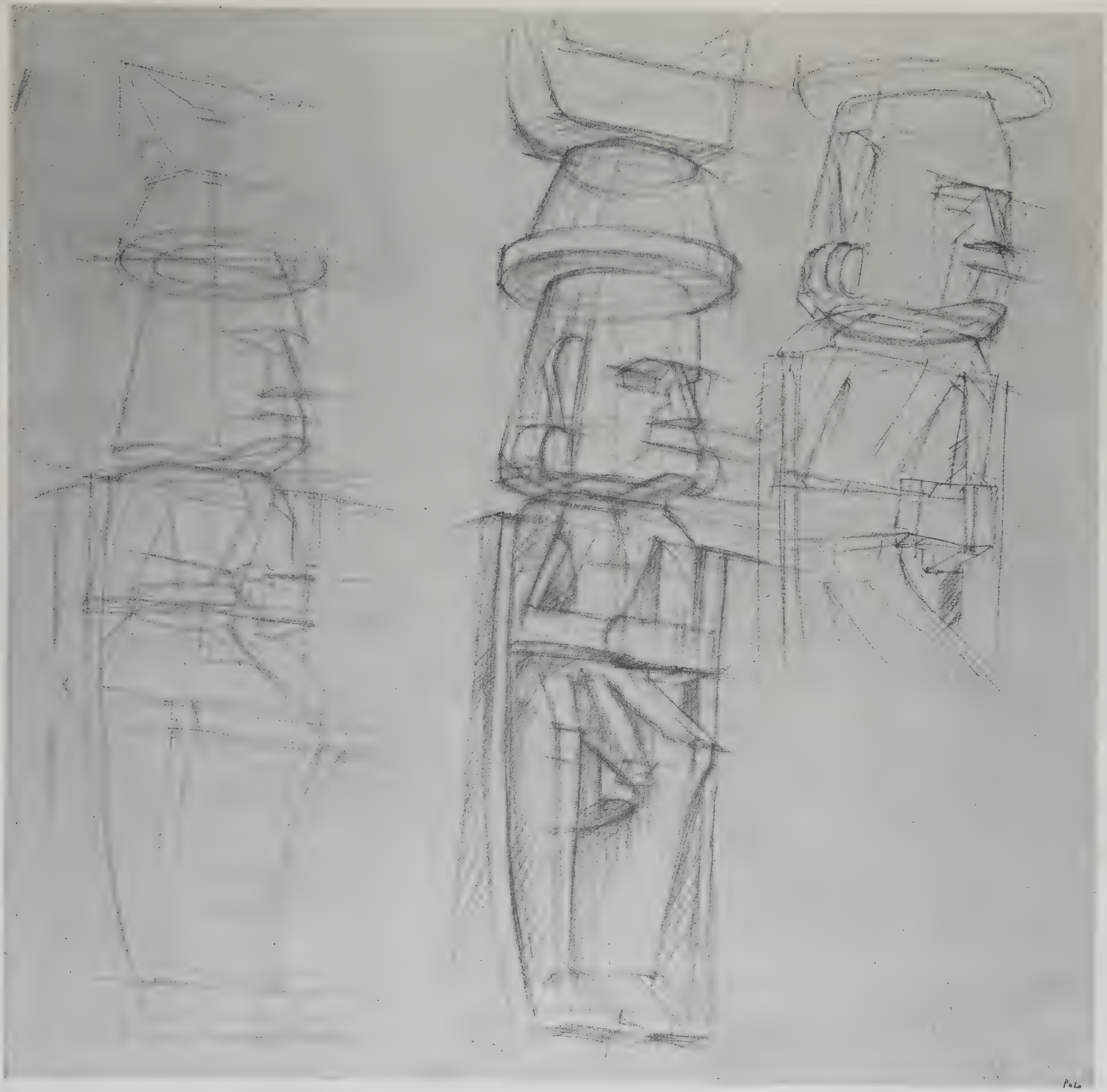




These studies show the structure of the drawing of the carved-wood figure. The students try to comprehend the underlying basic forms of the object; the final drawing is developed through formal, linear differentiation of details. In contrast, the drawing on the following page shows a more spontaneous, rhythmic, and expressive interpretation of the same figure.

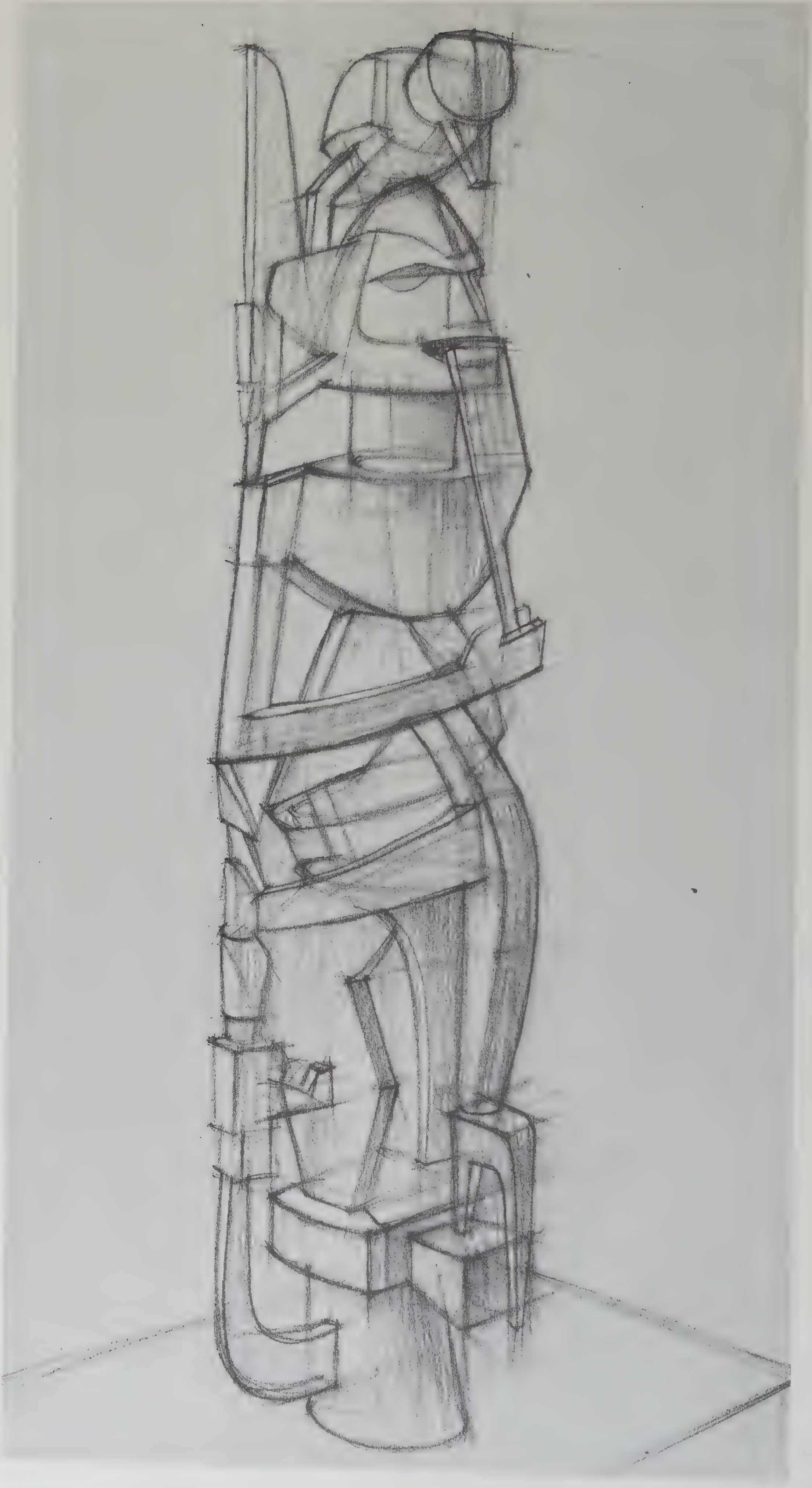






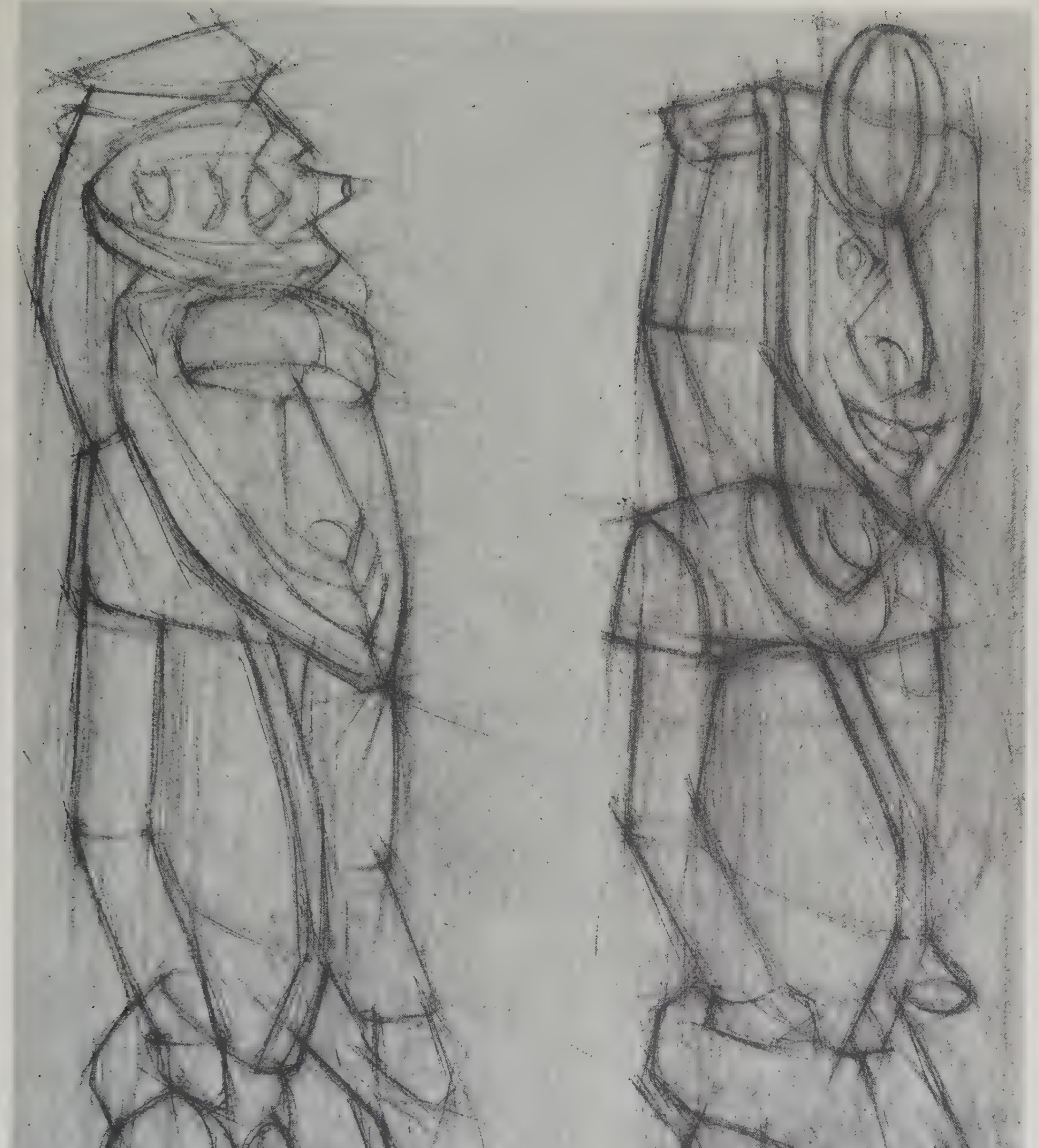
These studies show the stages in drawing a carved-wood figure.

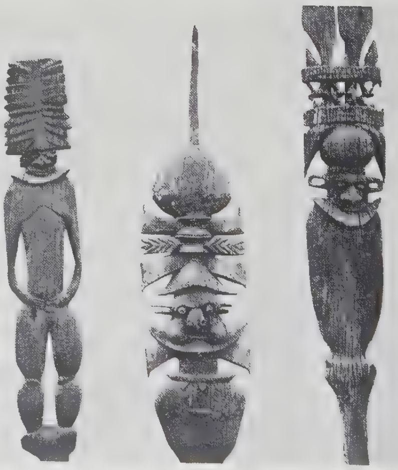
The teacher analyzes the work of the student based on his experience. Critical discussion of the work and the resulting corrections enable the student to reach his goal in a shorter time than he could on his own.

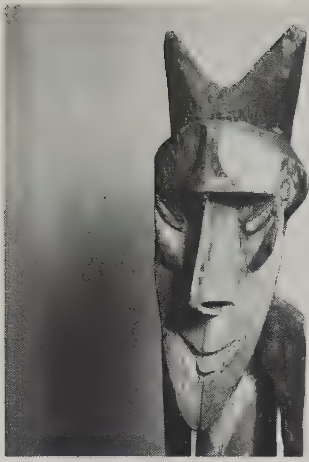


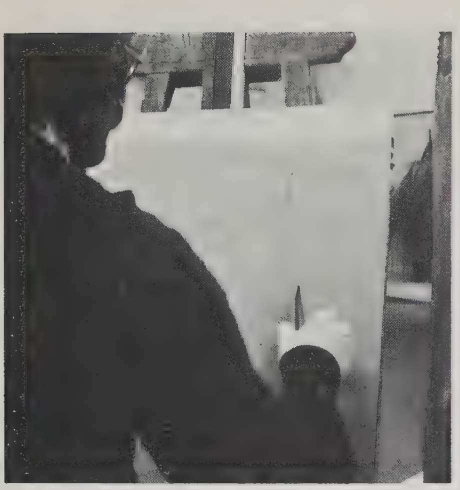
Drawing large, complex objects demands concentration and perseverance. Details must always be seen in relation to the entire form and translated graphically so that the basic form remains dominant. The drawing process is both analytic and synthetic.

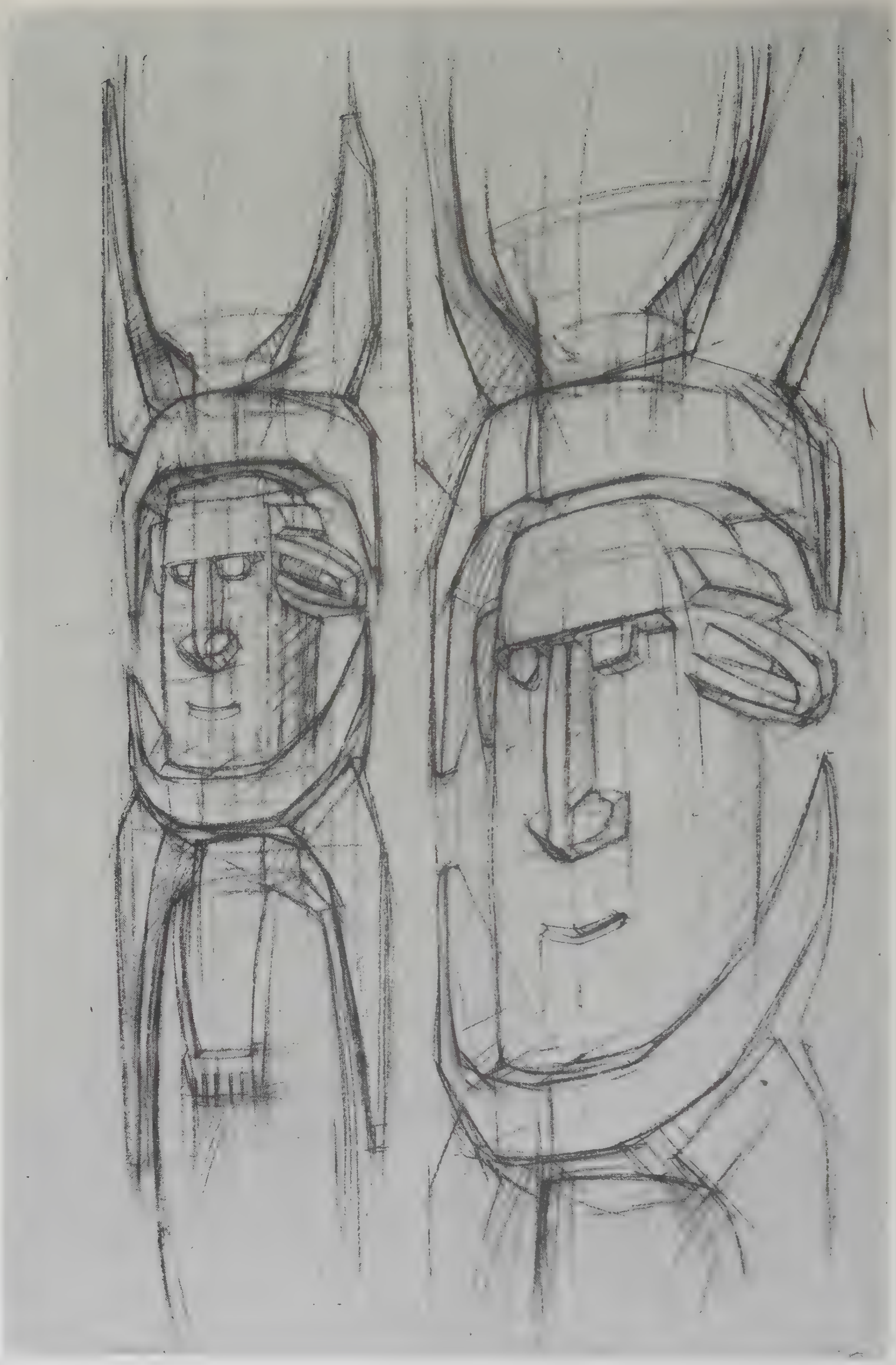
The photographs on the right suggest the variety of figures available in the museum. They are approximately the size of a person.





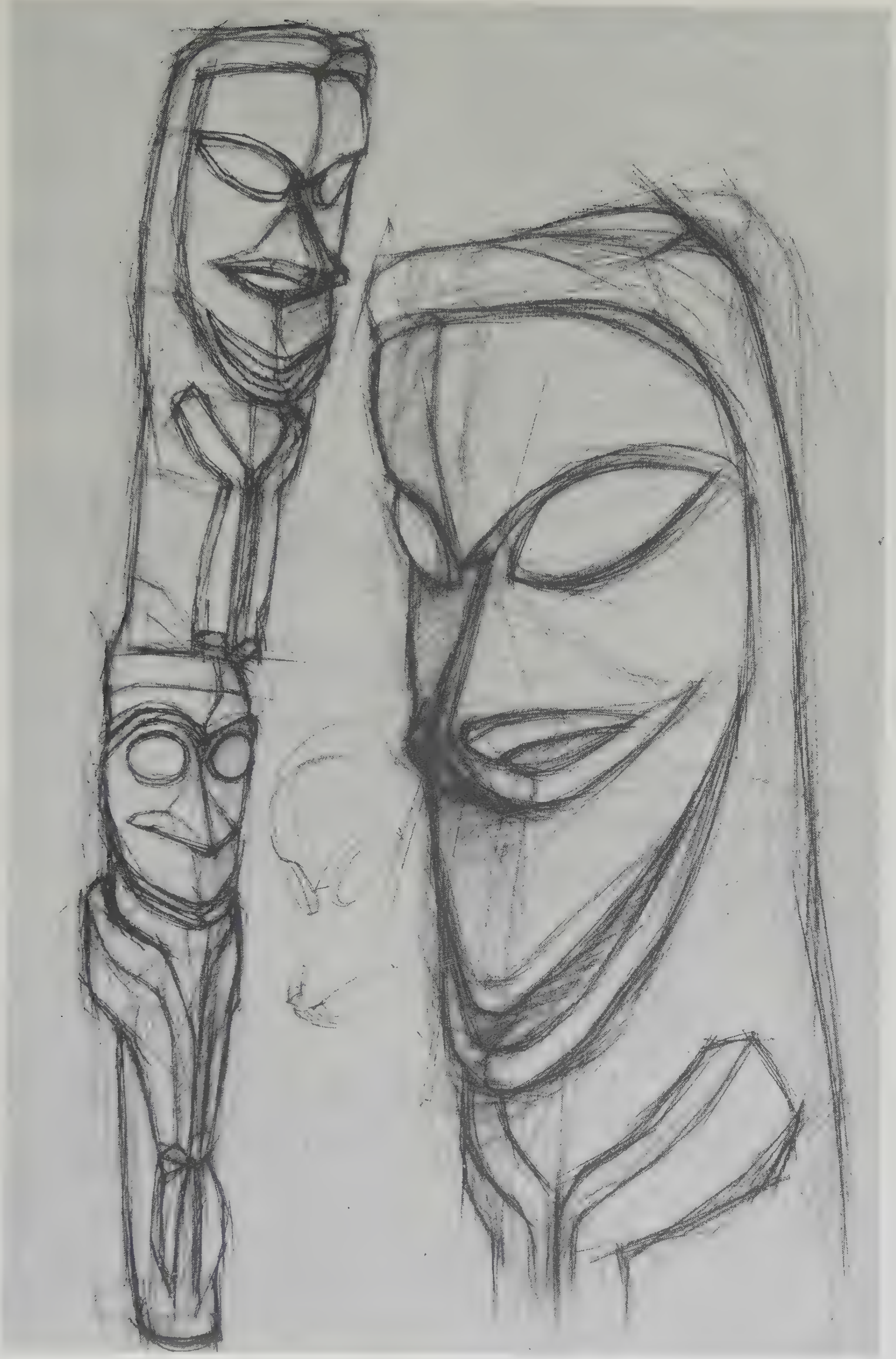


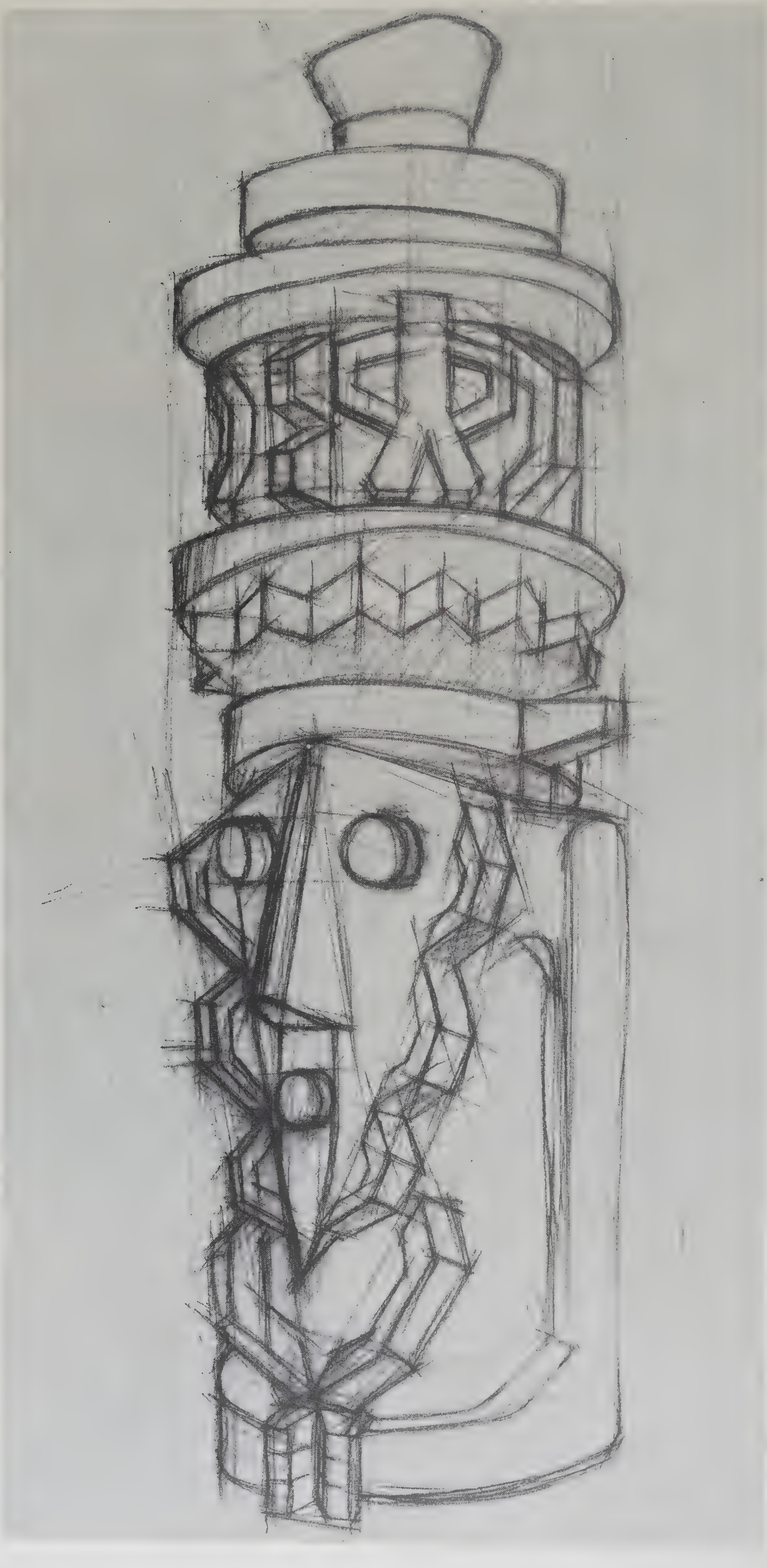




On the extreme left and right students are at work.

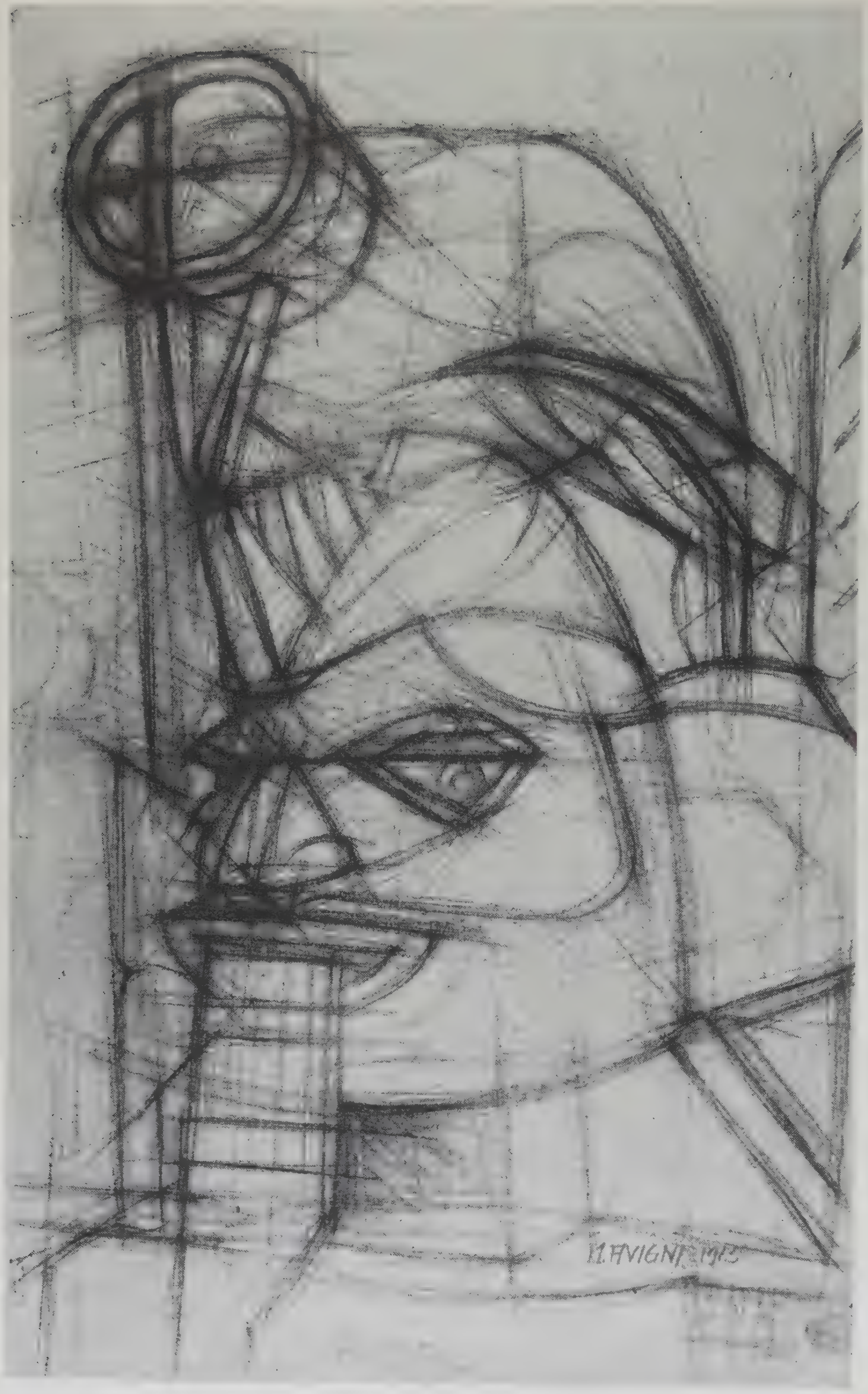
Spontaneity is often lost with prolonged work on the same drawing. Based on previous experience, repeated studies of the same object in the same or a different position and with greater elaboration of details allow a clearer formulation.





The detailed study on the left creates a neutral, distant effect with a constructive, analytical interpretation. The dynamic, rhythmic drawing on the right expresses the student's impression of the object and his interpretation of its cultural function.

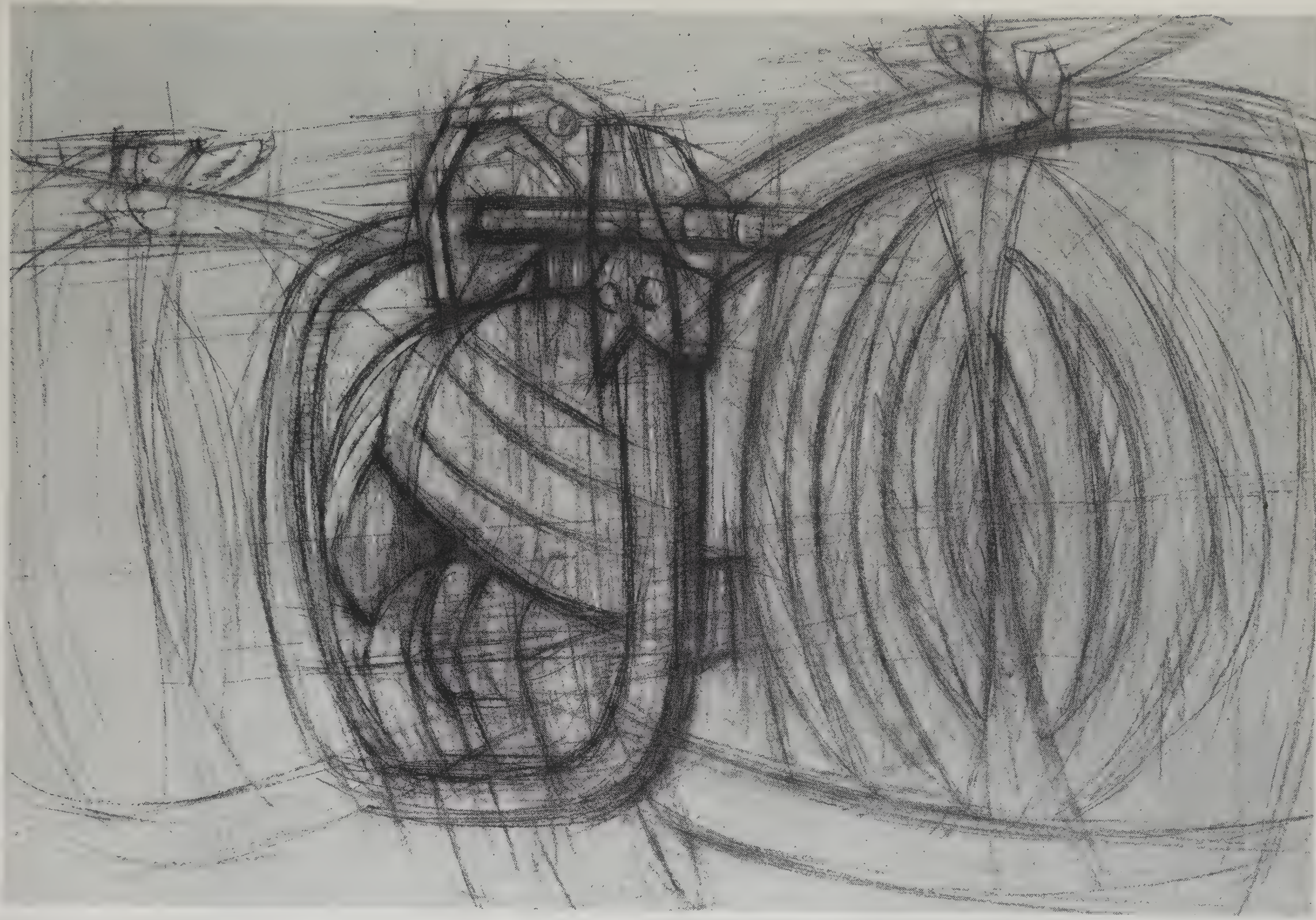
The photographs in the center show care figures from Korewori, New Guinea in the collection of the Ethnological Museum, Basel.

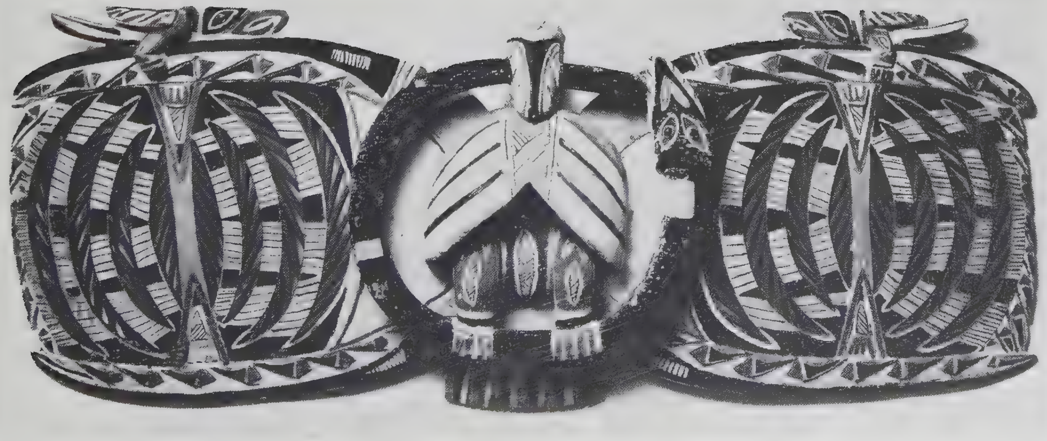


The size of many objects in relation to the format of the drawing paper demands additional creative decisions. The representation should be interestingly placed within in the format, and inessential elements omitted.

Both of these drawings are carefully structured. The spontaneous but controlled line, the dimensional effect, the application of accents, and the tone values are differentiated.
In the drawing on the last page, the student tried to incorporate the different materials of the figure and to represent the painted designs with tonal values.

The working situation at the museum.



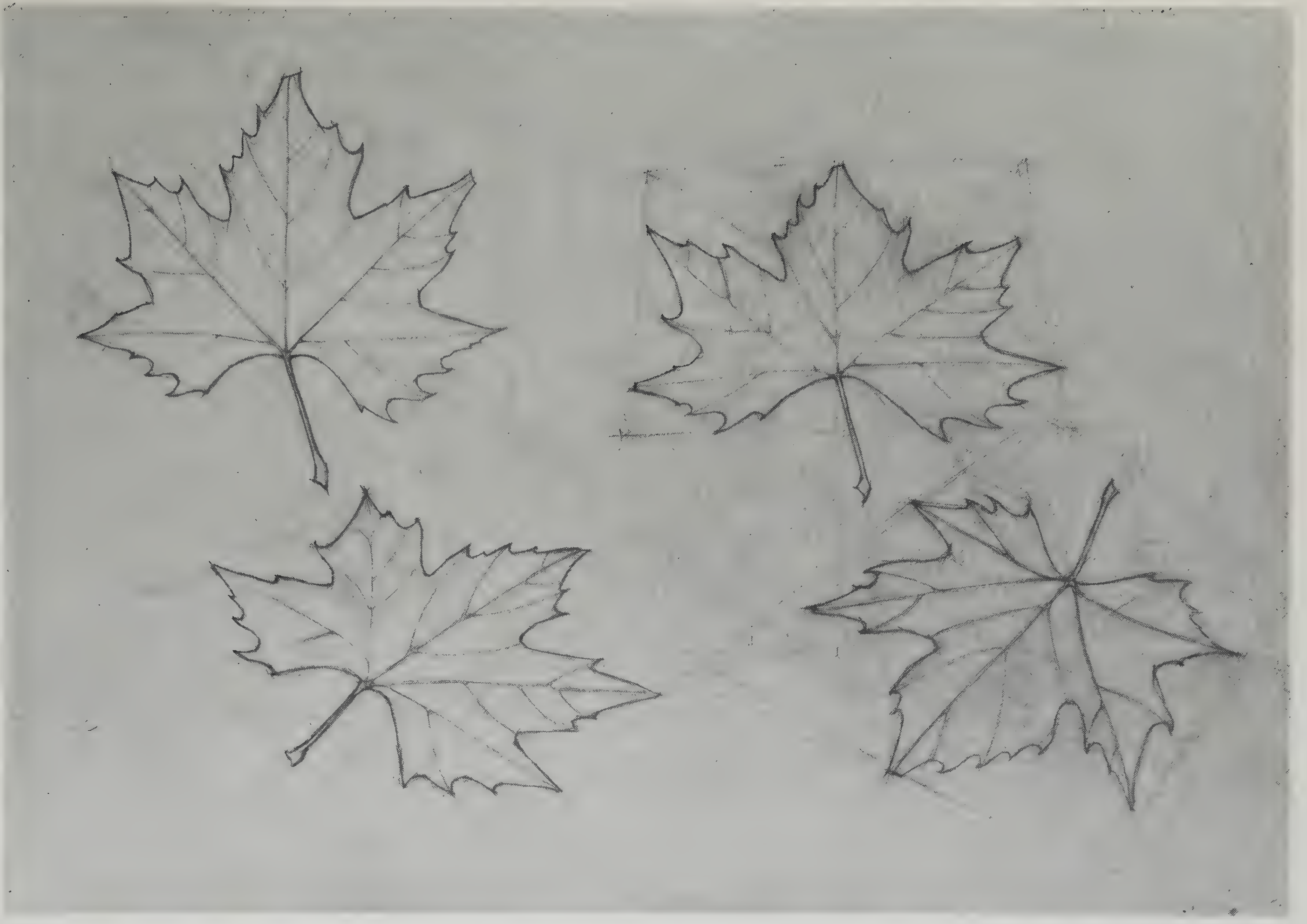


In object drawing and museum drawing spontaneous, personal interpretation of the object is subordinate to structure. The objects are man-made, either abstracted from nature or constructed from imagination. In contrast, in the pictorial translation of natural objects the students are directly confronted with the process of creative abstraction involved in drawing. The plant world offers a wide variety of forms, colors, textures, and structures to encourage personal interpretation; they are ideally suited to free, spontaneous, and intuitive rendering. Spontaneity, representation possibilities, developing the drawing and personal interpretation are the foundation of the drawing process.

The interrelationship is important to the representation of organic light and shadow structures, because direct formal control is impossible; nature studies help the student develop sensitivity and the ability to differentiate tonal values. The placement of the shadow lines should reinforce the form, material, and spatial effect. A feeling for proportion and spatial relationships develops by combining different objects. Decorative, formal elements and accents are explored for contrast (large-small, high-low, narrow-wide, curved-straight, light-dark, flowing-quiet, many-few, for example).

The students begin by drawing simple leaf forms such as branches, plants, and vegetables with spherical, bulbous, and cylindrical shapes. Pencils from 3B to 6B are used on different-toned and -textured paper; more experienced students experiment with charcoal, brush, or pen-and-ink.

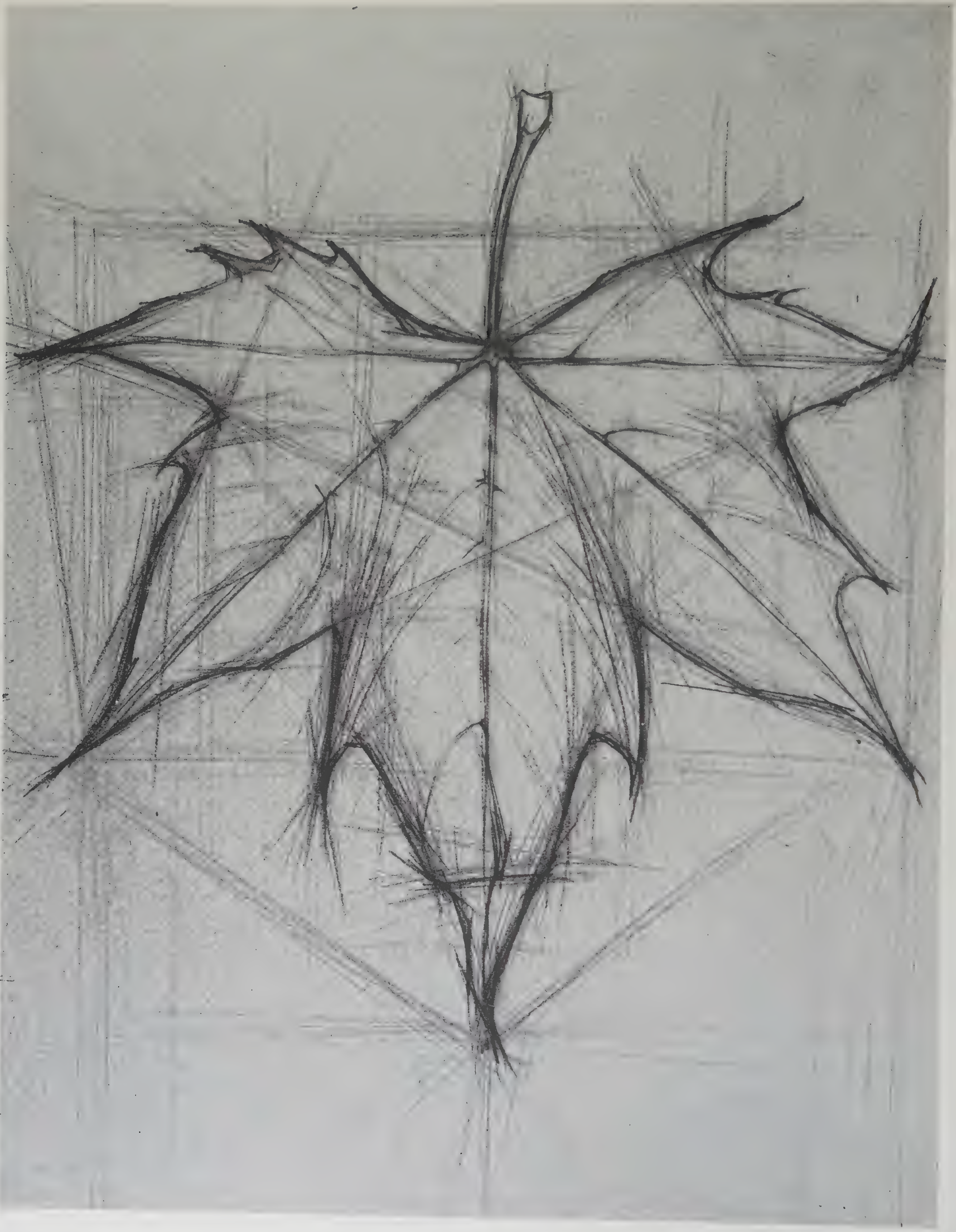
Each drawing is evaluated on the basis of personal interpretation and expression. Comparison of individual styles is especially interesting and stimulating to the students.

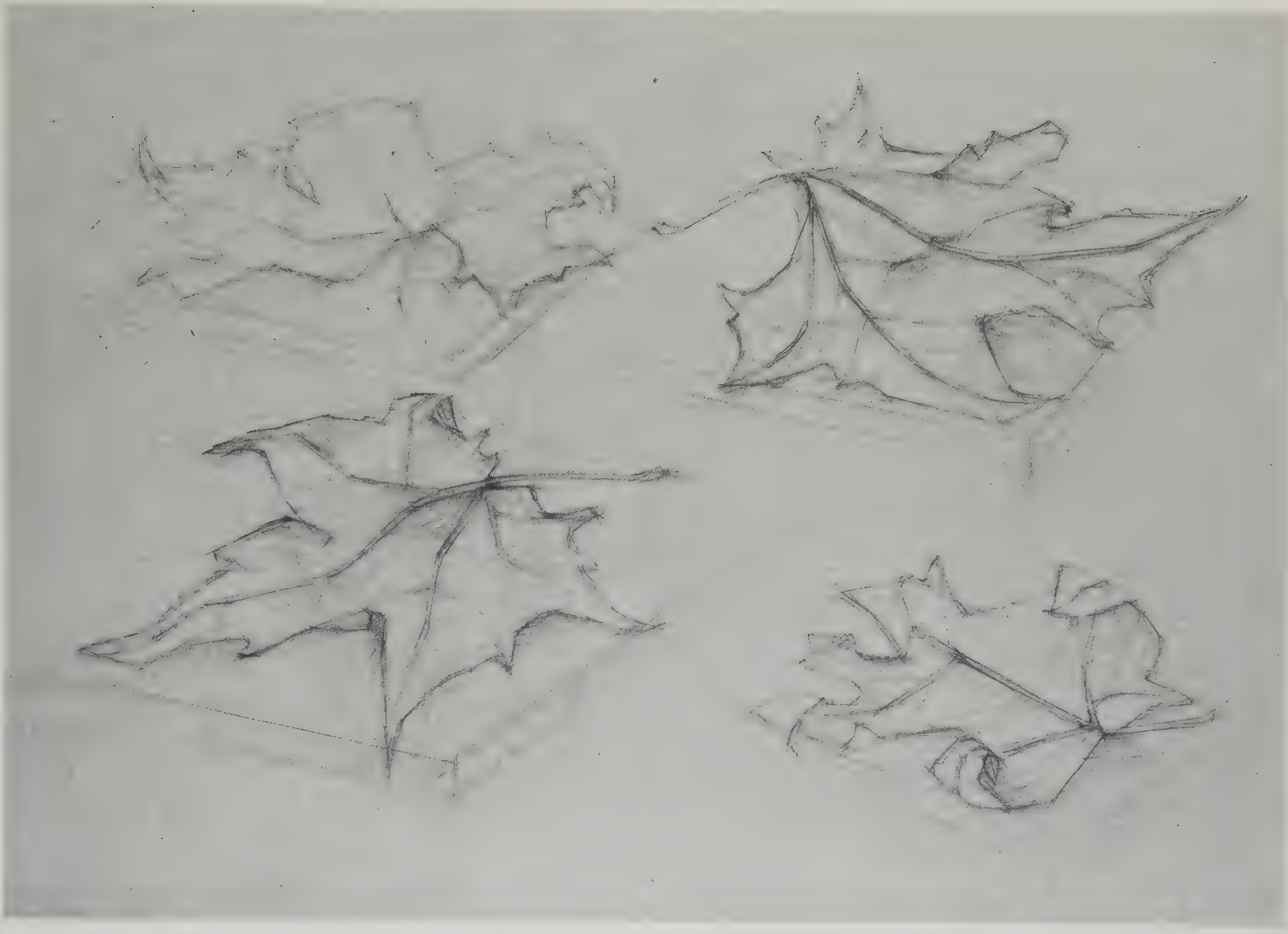


In the beginning pressed or naturally dried leaves are the subjects for pictorial translation. They are drawn from an isometric frontal viewpoint and foreshortened in different positions from different angles. In contrast to solid objects, flat objects can be drawn from a stronger top view. The examples shown here and on the following three pages are studies of Norwegian maple leaves.

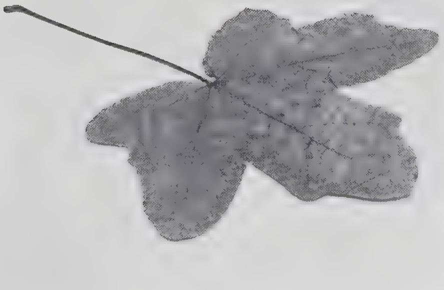
The proportions within a rectangular plane are indicated with a few lines. The structure is defined through the position of the veins and through the rough outline of the leaf. Tonal structure is developed through rhythmic movement of the contour, rendered in bold lines, and through the incorporation of details. The above drawings are carefully structured while the study on the following page is more rhythmic.

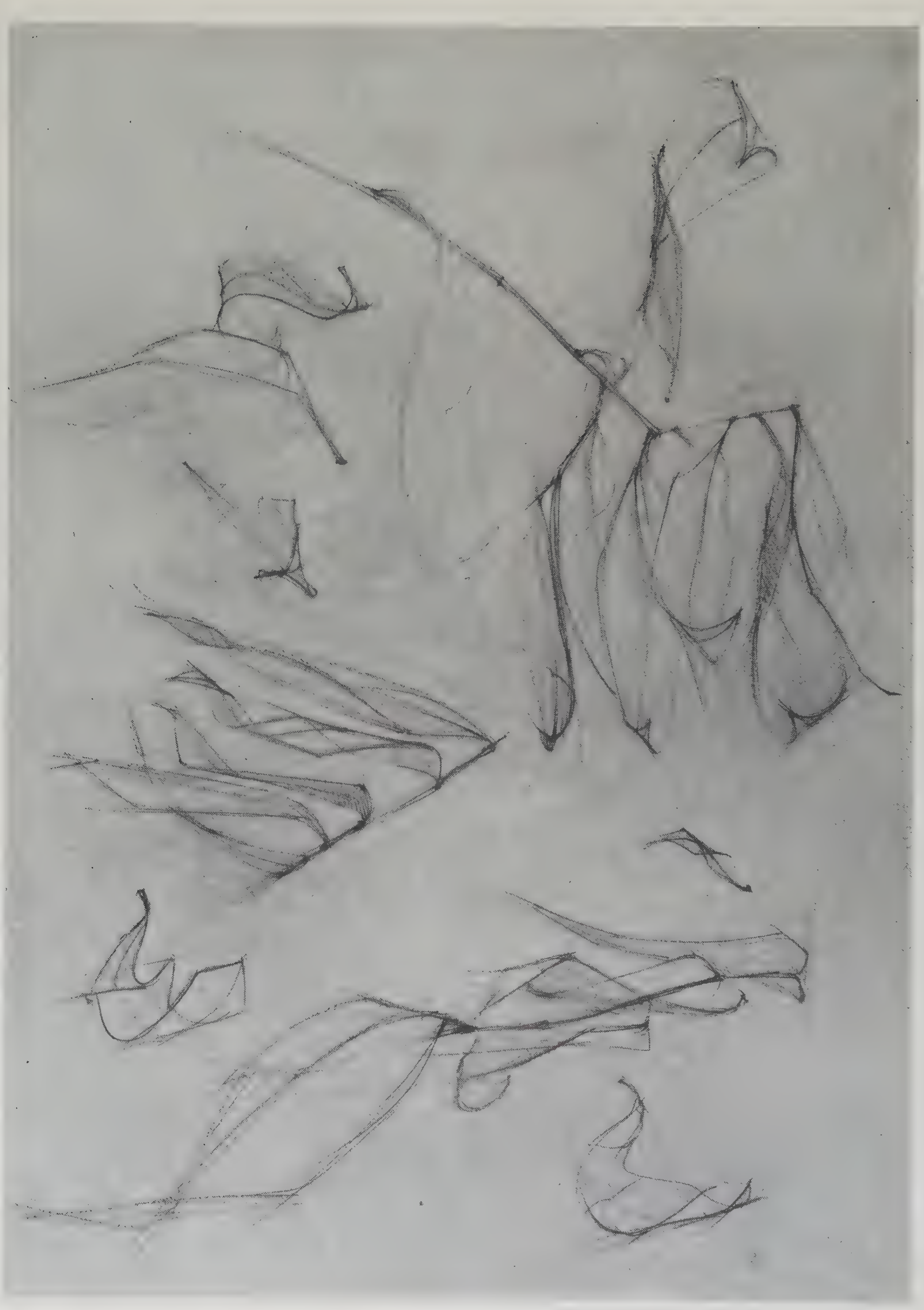
The photographs below and on the following right-hand page show frontal and foreshortened views of maple leaves.



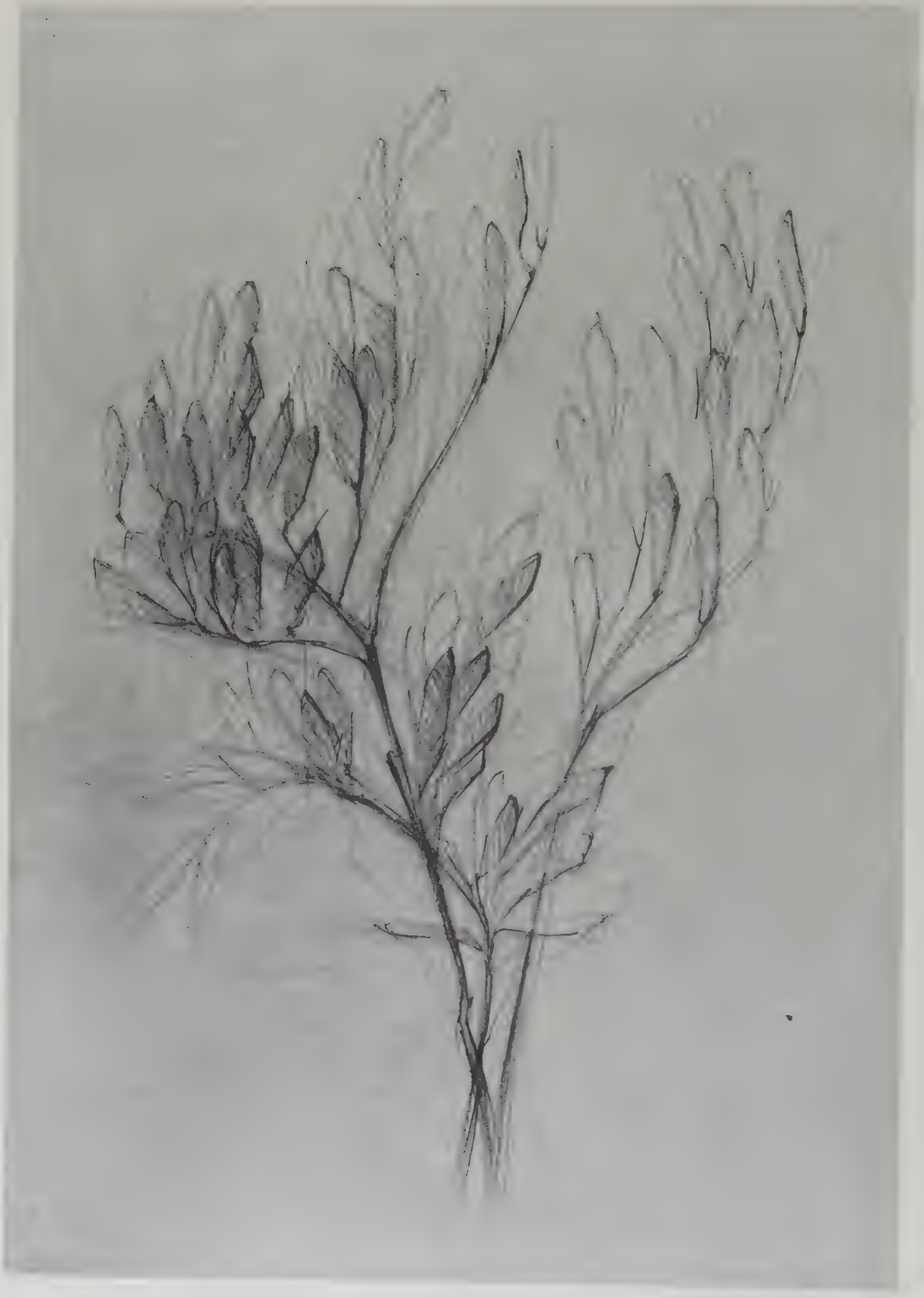


The curled surfaces exhibited in the contours and veins of autumn leaves are studied through their dimensional form sequences. Careful insertion of direct and indirect shadows in appropriate areas supports the spatial compression.
In the study on the following page the search for form and the working process are legible.



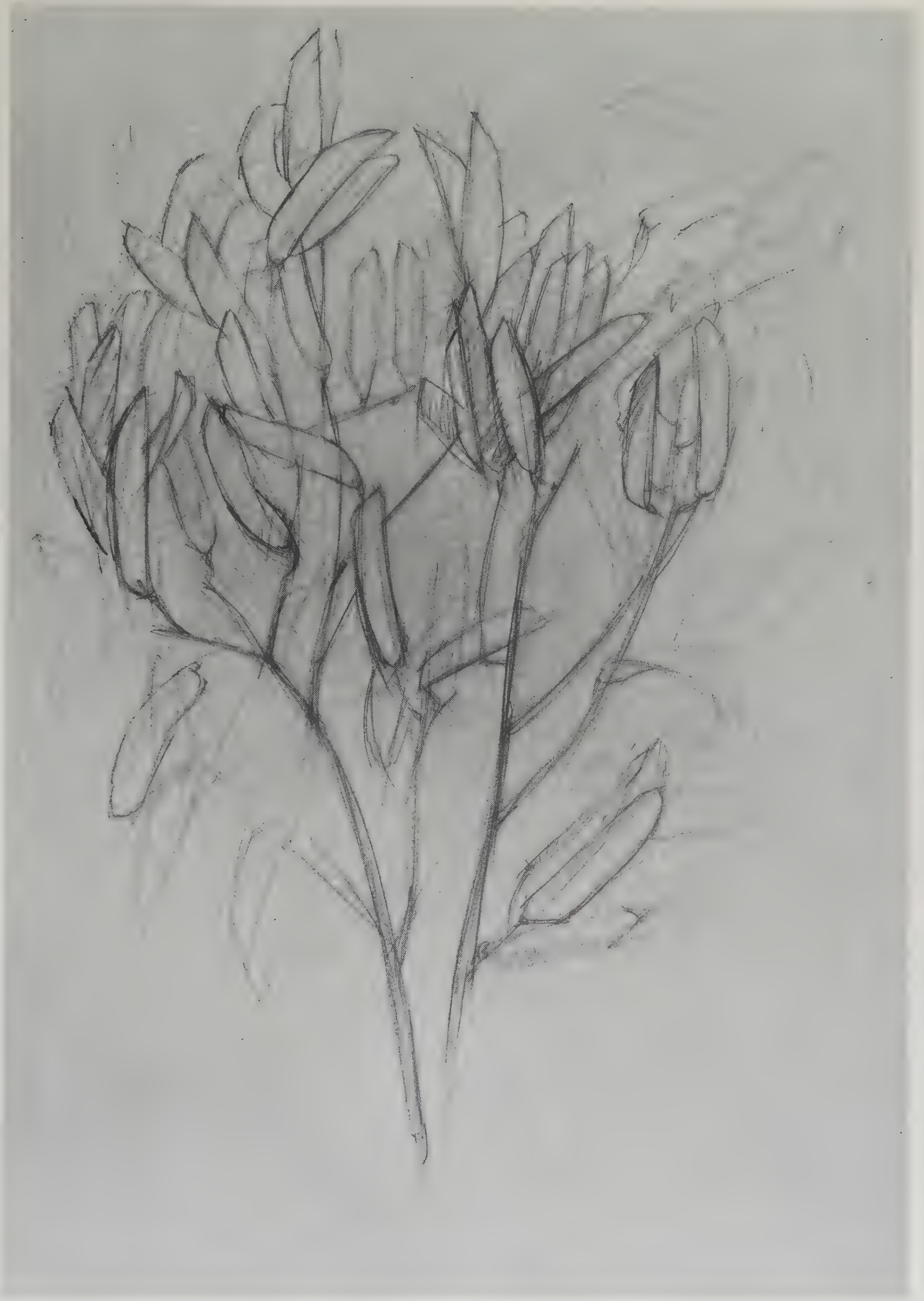


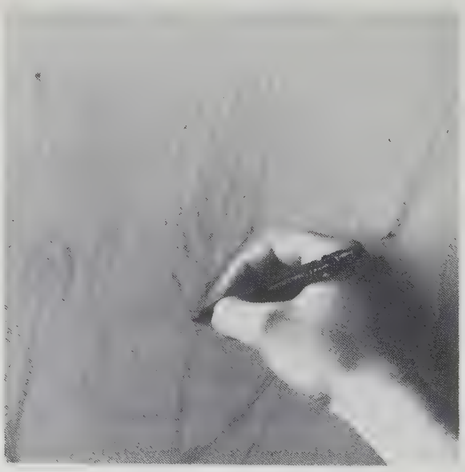
Branches with dried leaves expand the study from single shapes to forms with many parts. Spiral and twisted surfaces, leaf sequences, and the harmonious interrelationship between forms and negative spaces should be understood and organized in a structured, rhythmic drawing. Accents result from line variation and from the use of flat, gray tones.



A branch with dried seed pods, photographed from different tabletop positions, was used as the subject for pictorial translation. The studies on the following six pages, drawn by different students, show the variety of personal interpretations and styles. With careful observation of details the students become aware of the rhythmic movement within the branch and are not deceived by trivial formulations.

The seed pods appear as leaves in this drawing. They are arranged in upright groups, carefully drawn, and united through tonal values that tend to subordinate linear qualities.

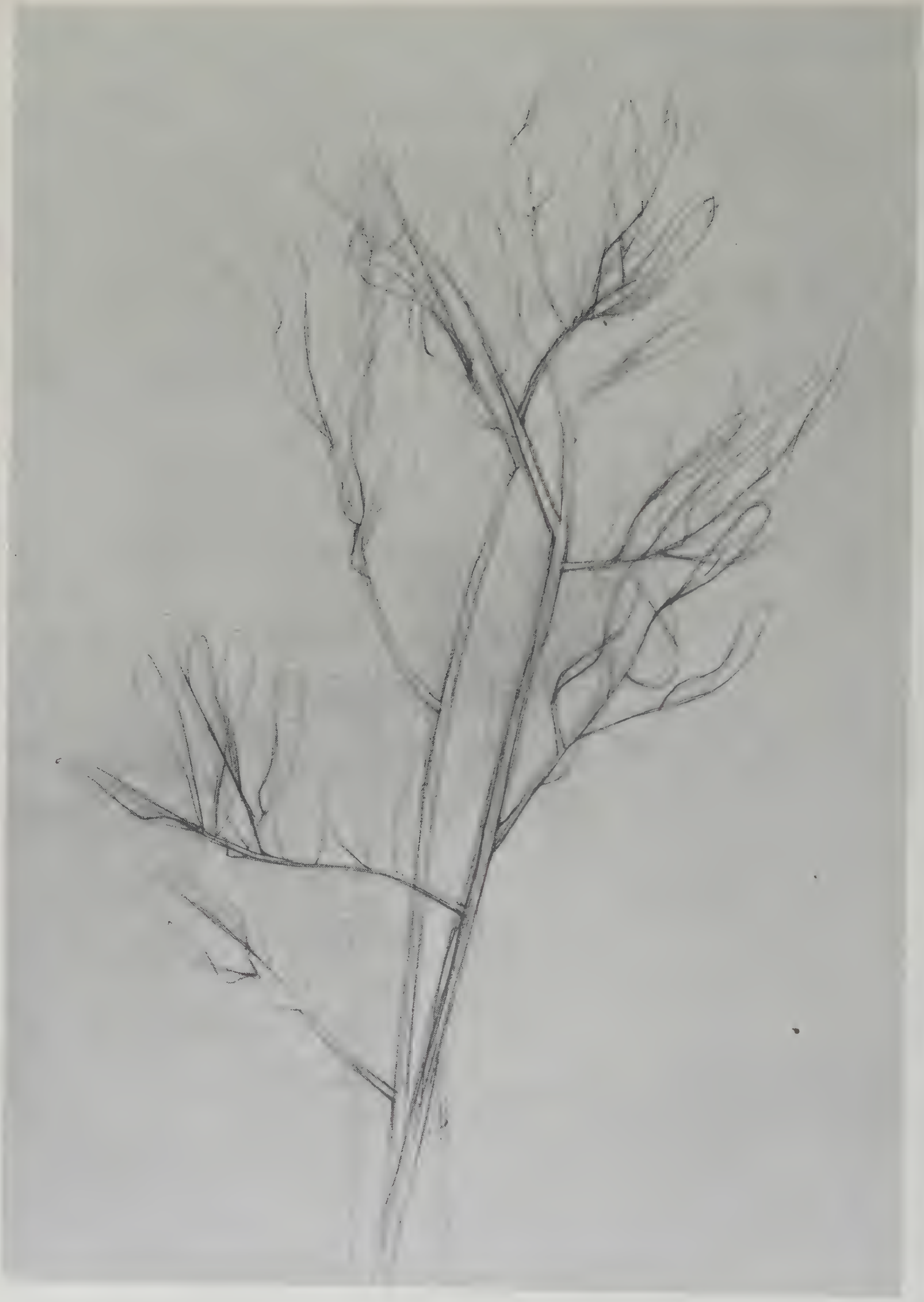




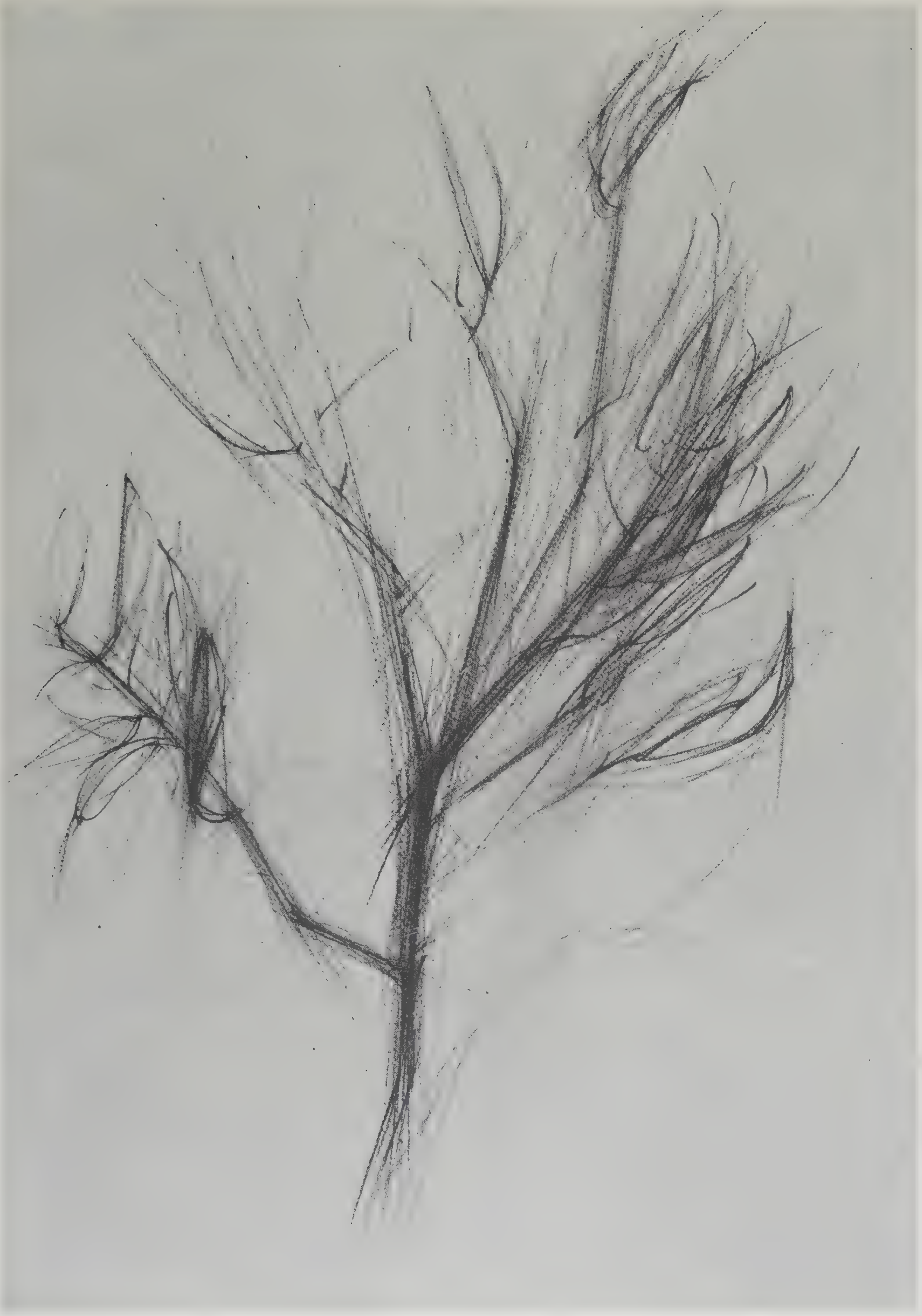
This arrangement of seed pods exhibits more movement. The drawing seems more aggressive with its stronger linear quality and variety of accents.

The beginning stage of the adjacent large drawing shows the typical position for holding the pencil.

The students are drawing a branch placed on a platform in the middle of the room. They can select their position corresponding with their drawing intention.

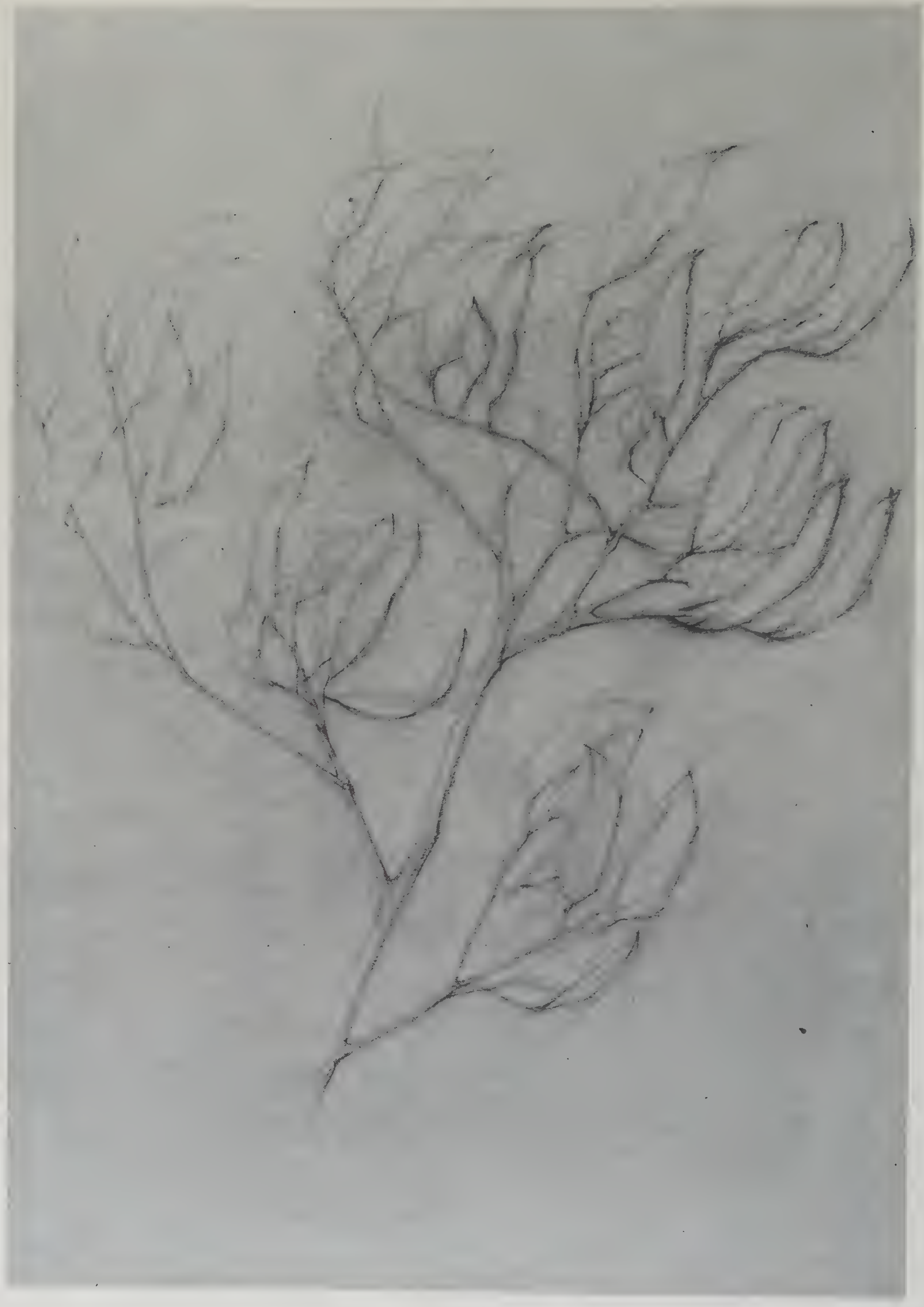


In this example the structure of the branches remains dominant. The drawing is begun from the interior form of the branch; the scattered seed pods are clearly worked and lightly indicated.



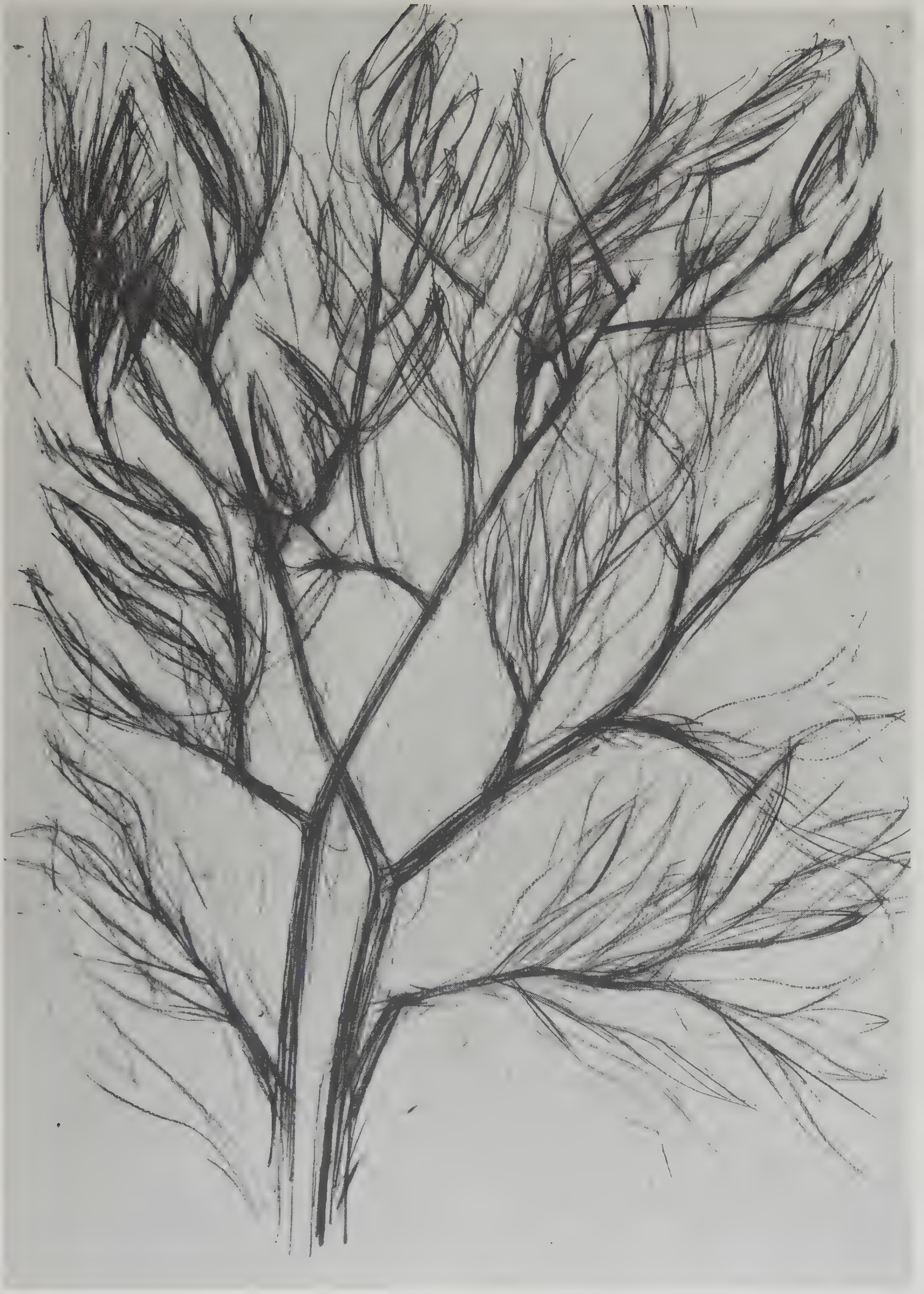
The arrangement of single forms is subordinate in this drawing. The branch is represented as a complete rhythmic structure; the lines are strong and bold.

Many different objects are used in the drawing classes.



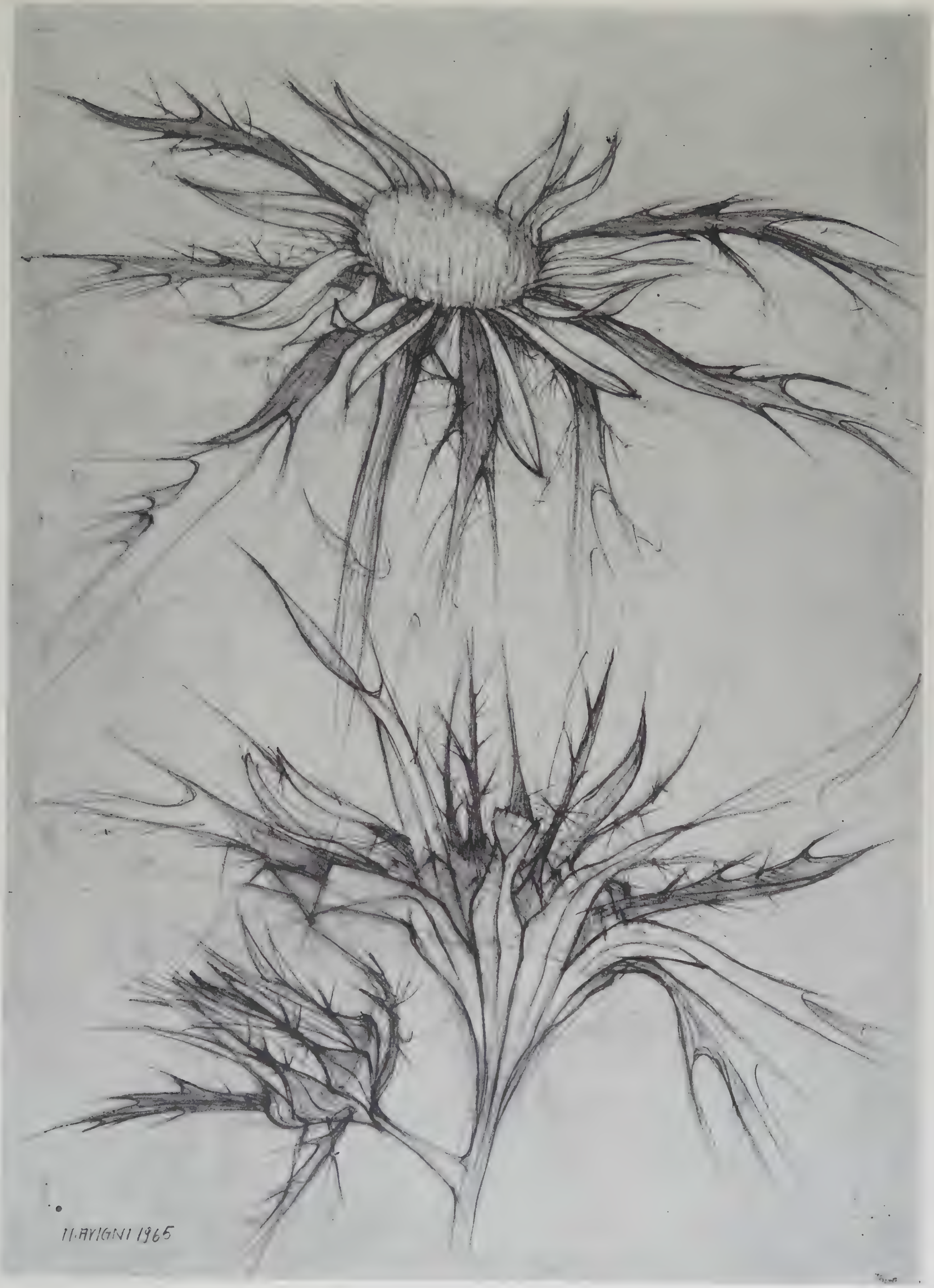
In other possible situations the branches vary widely in growth, leaf, and seed formations.

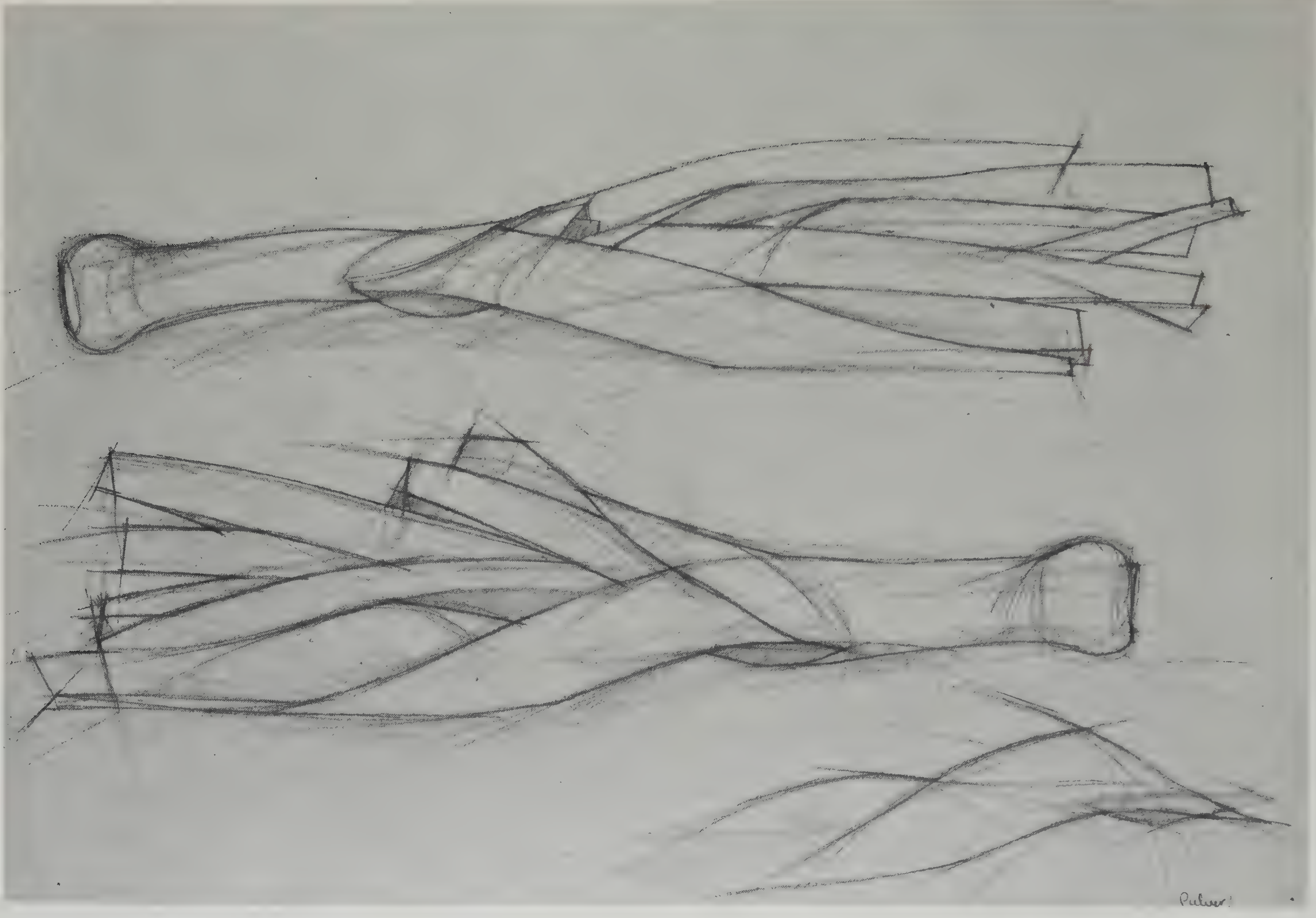
This delicate, light representation is conceptually restrained. The structure of the branches is very carefully drawn. The composition makes full use of the paper format.



The format of the paper is almost overpowered in this expressive, dynamic study executed in a rhythmic, controlled style. It avoids rendering of details.

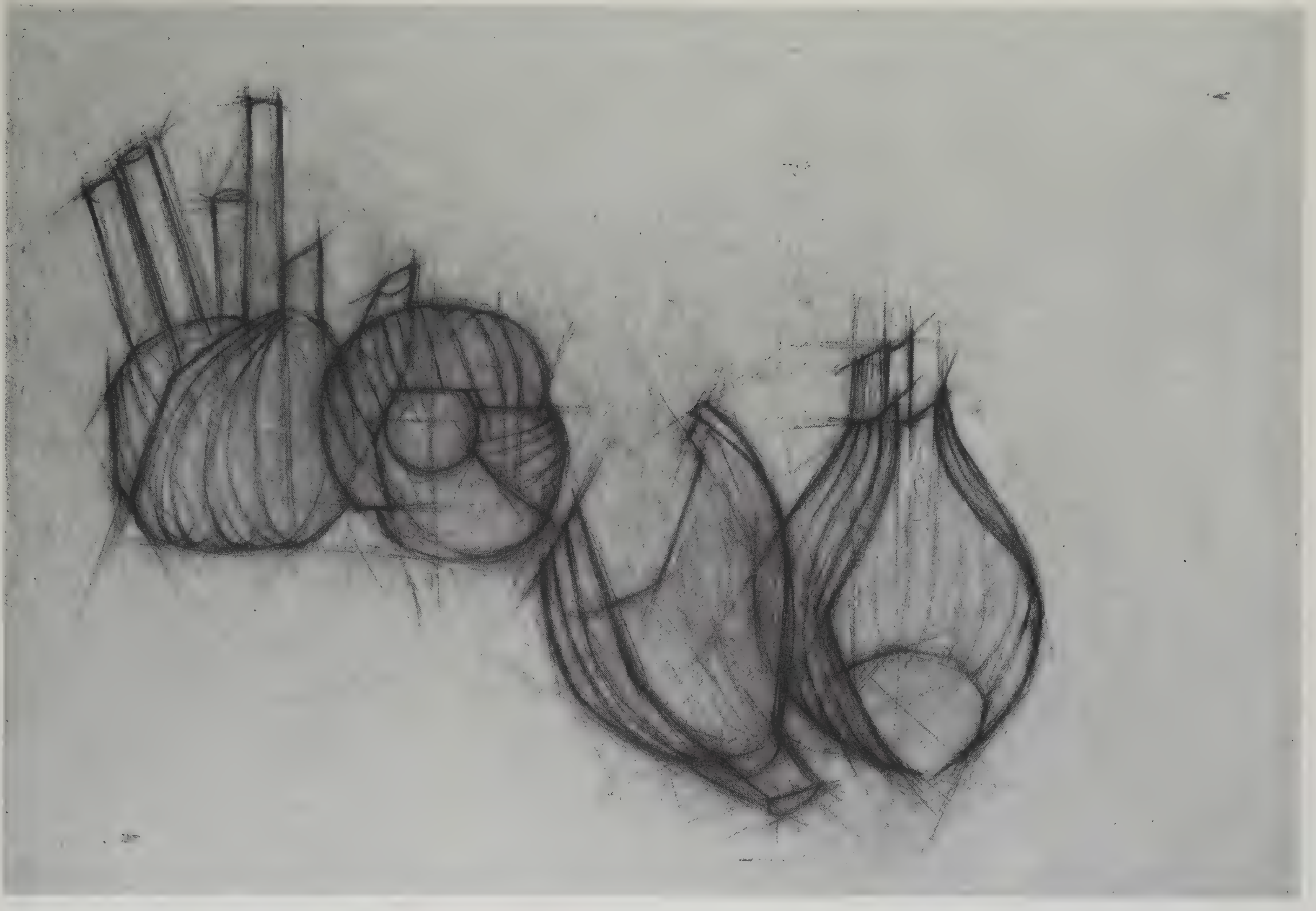
The drawings on the following two pages show a similar contrast: the first is very restrained and delicate; the second is more constructive, dynamic, and energetic.


H.AVIGNI 1965

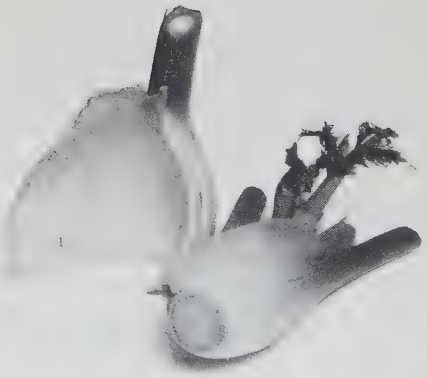


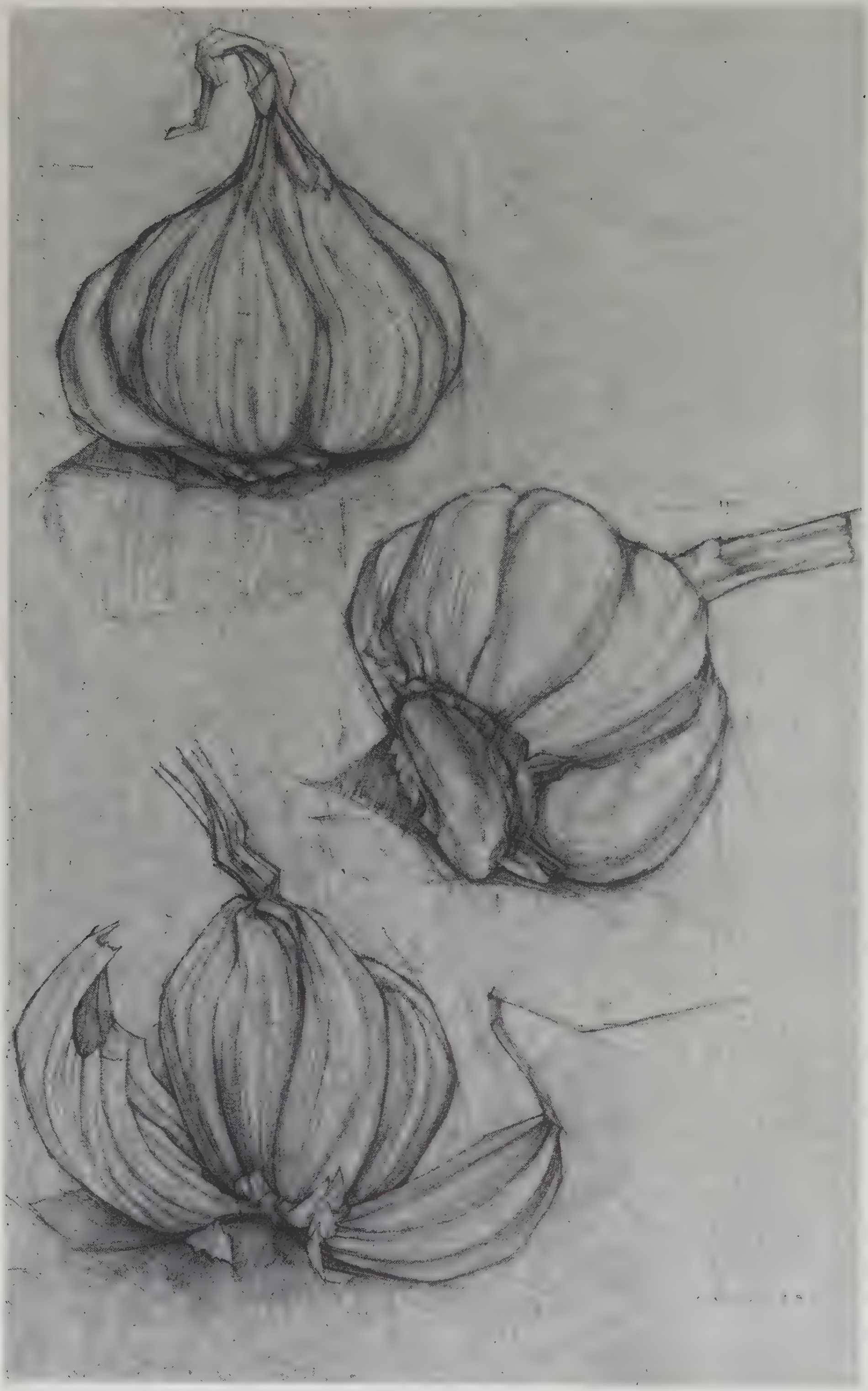
The alternating, interweaving leek leaves should be based on the cylindrical form of the stem. The overlapping of the leaves is defined through linear accentuations.

Many arrangements of leeks and fennel are possible.

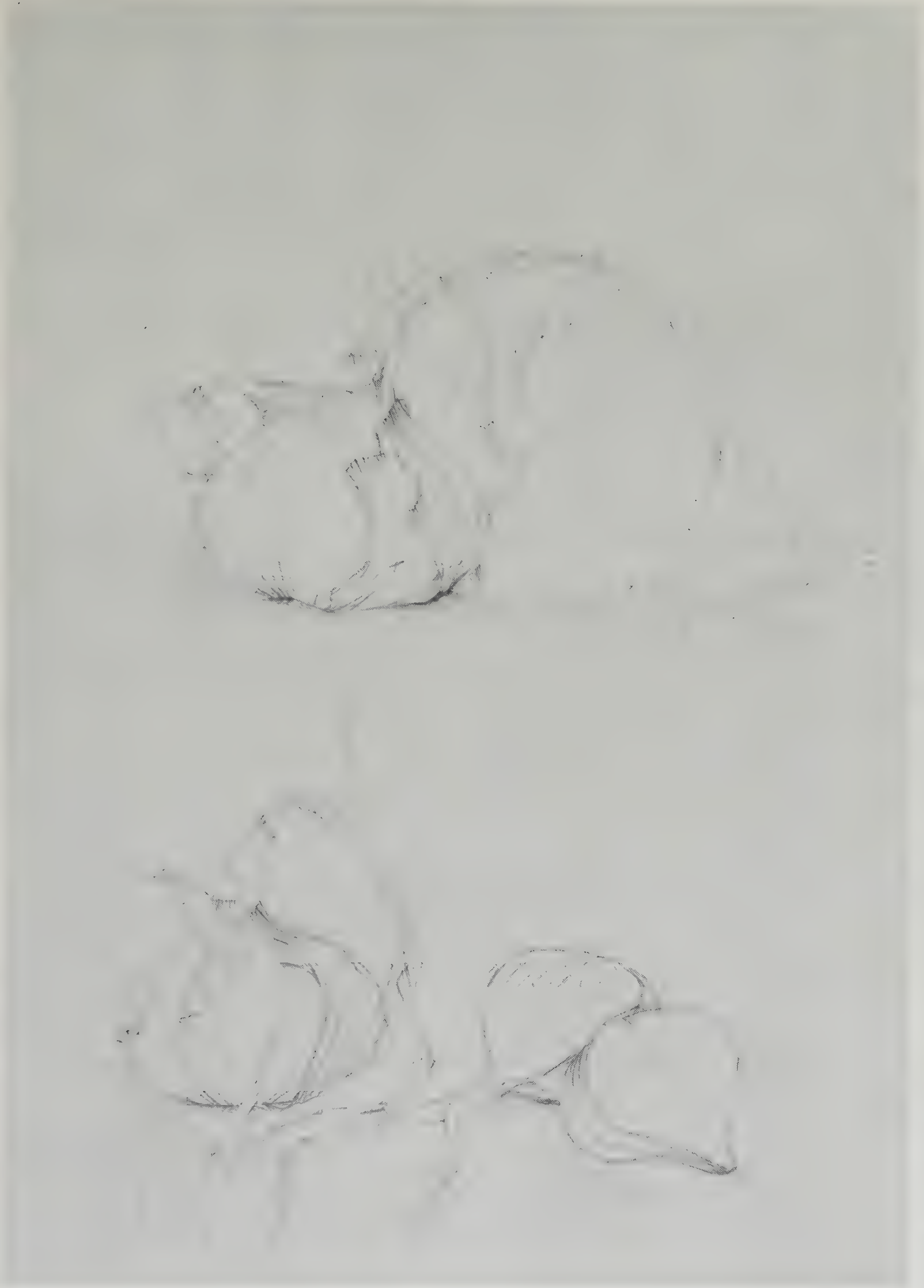


The bulb-shaped fennel is interpreted cubistically with linear variations. The basic forms are strongly accentuated; restrained treatment of the veins emphasizes the plant's spherical volume.



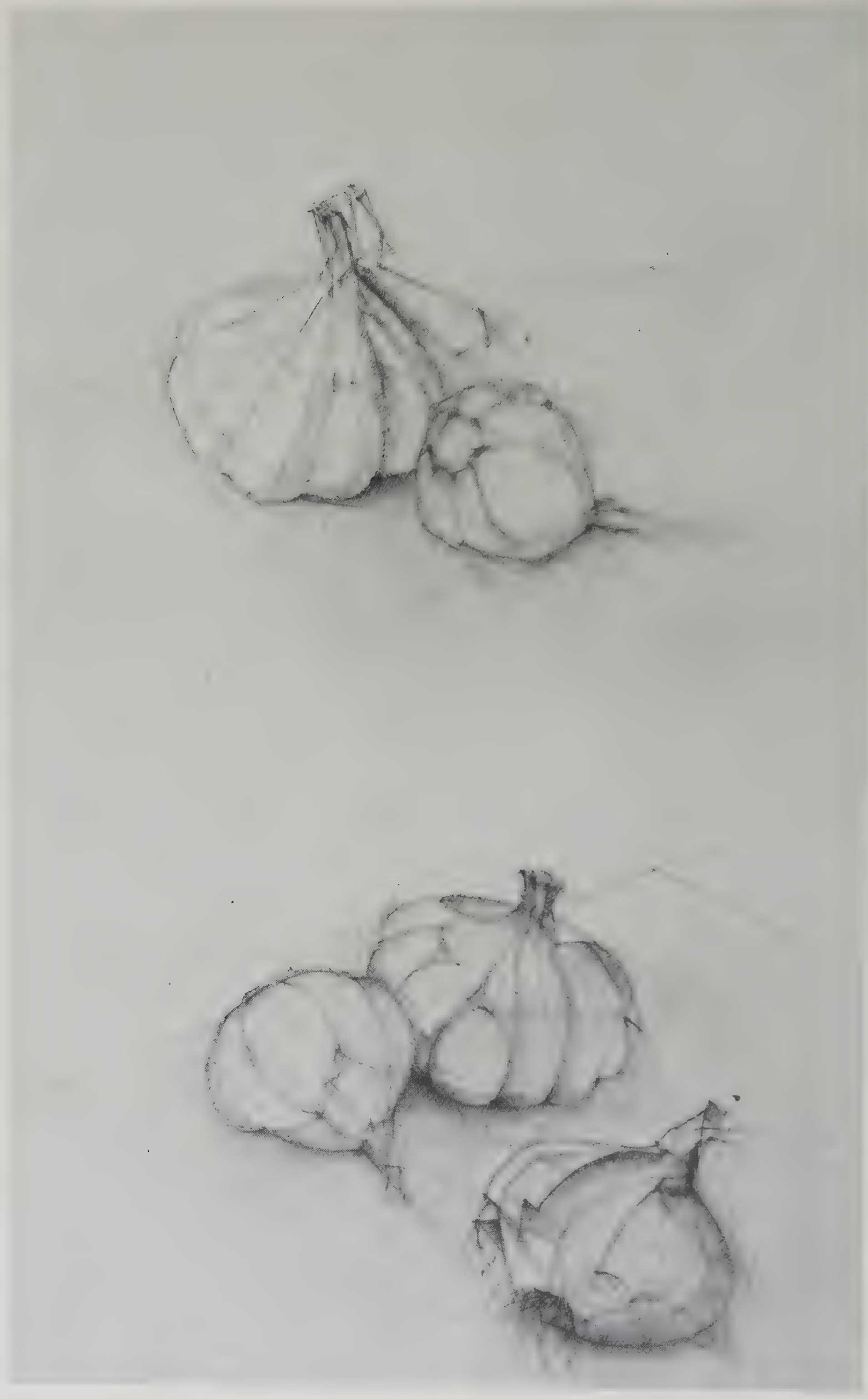


This drawing of a garlic bulb shows carefully structured, individual cloves. The thin skin is rendered in light lines. The drawing appears strong and unified despite the insertion of detailed leaf and root forms.



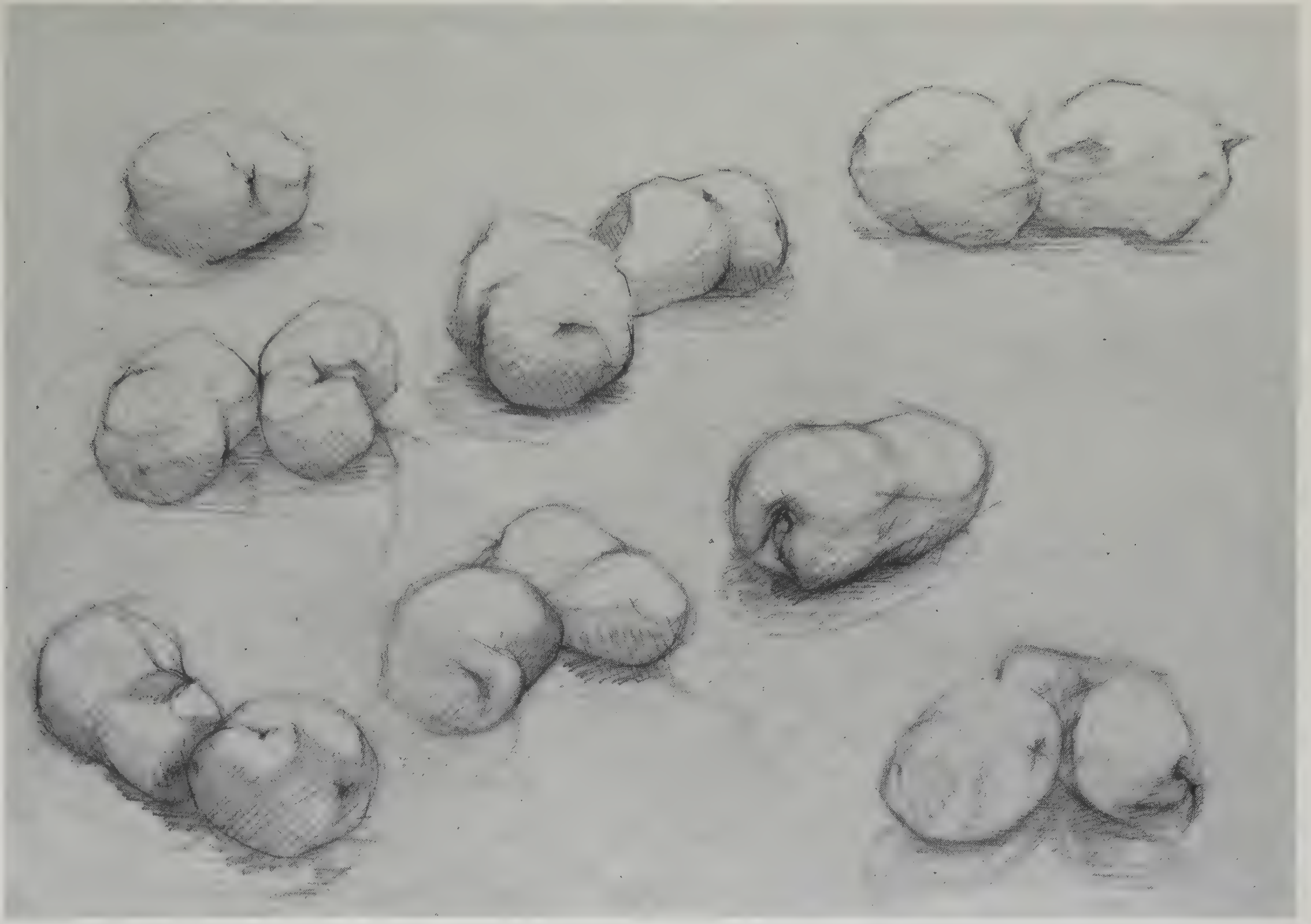
The form of the onion is contrasted with its thin, wrinkled leaves. The leaf veins and the partially fading shell show the dimensional structure. The surroundings are indicated with light lines. Despite the delicate linear treatment, the drawing exhibits contrasts.

Different positions of a garlic bulb are shown on the left; above, groups of spring onions.



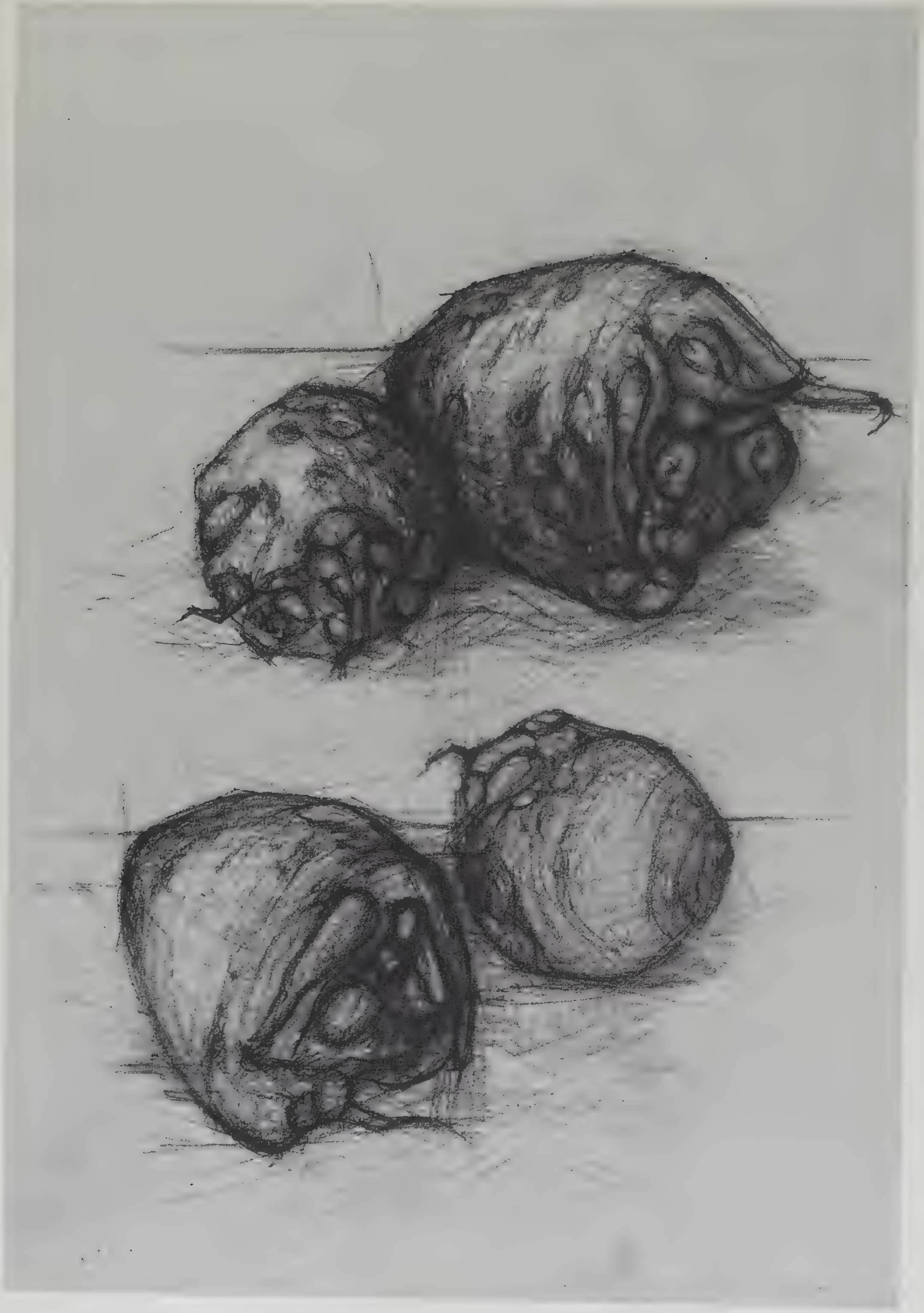
The students must structure their own compositions. Groupings of garlic bulbs are shown here.

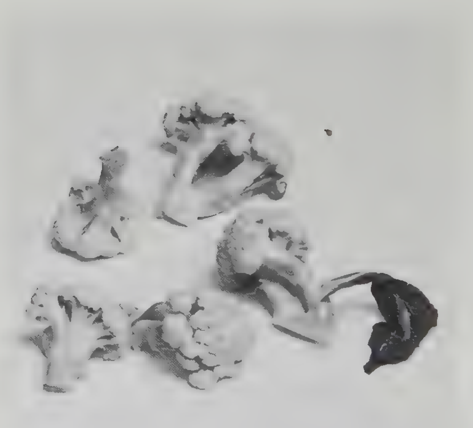
The individual forms in this drawing are very finely rendered, and sectional planes are partially indicated. They are placed at right angles to the central axis of the forms to strengthen the dimensional effect.



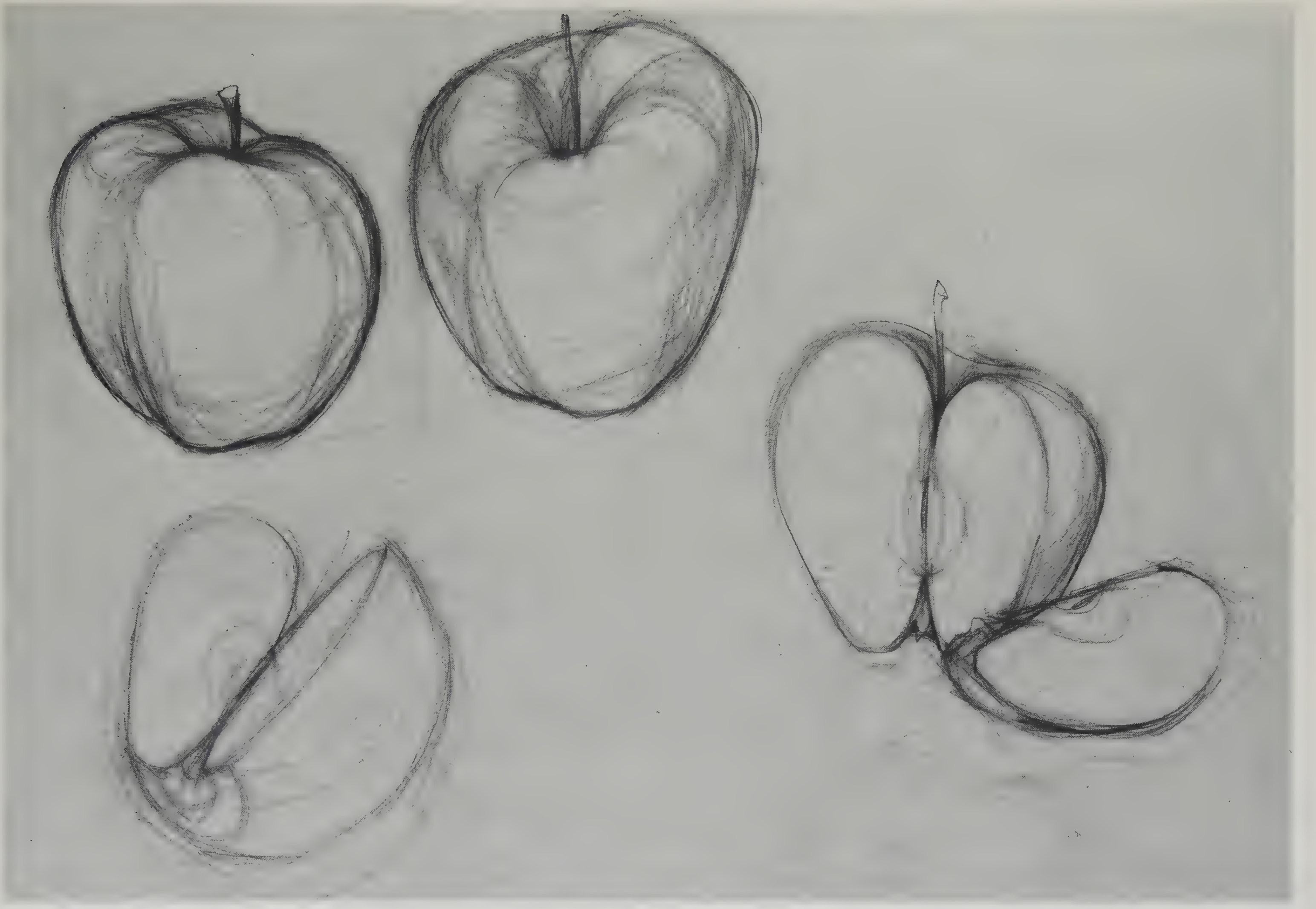
These studies of potatoes are based on the contrast between light and shadow. The surfaces are defined with lines, and the shadow is rendered with differentiated crosshatching, creating a cubistic appearance. The eyes and sprouts characterize the object.

Simple arrangements of different objects that contain few details are shown.



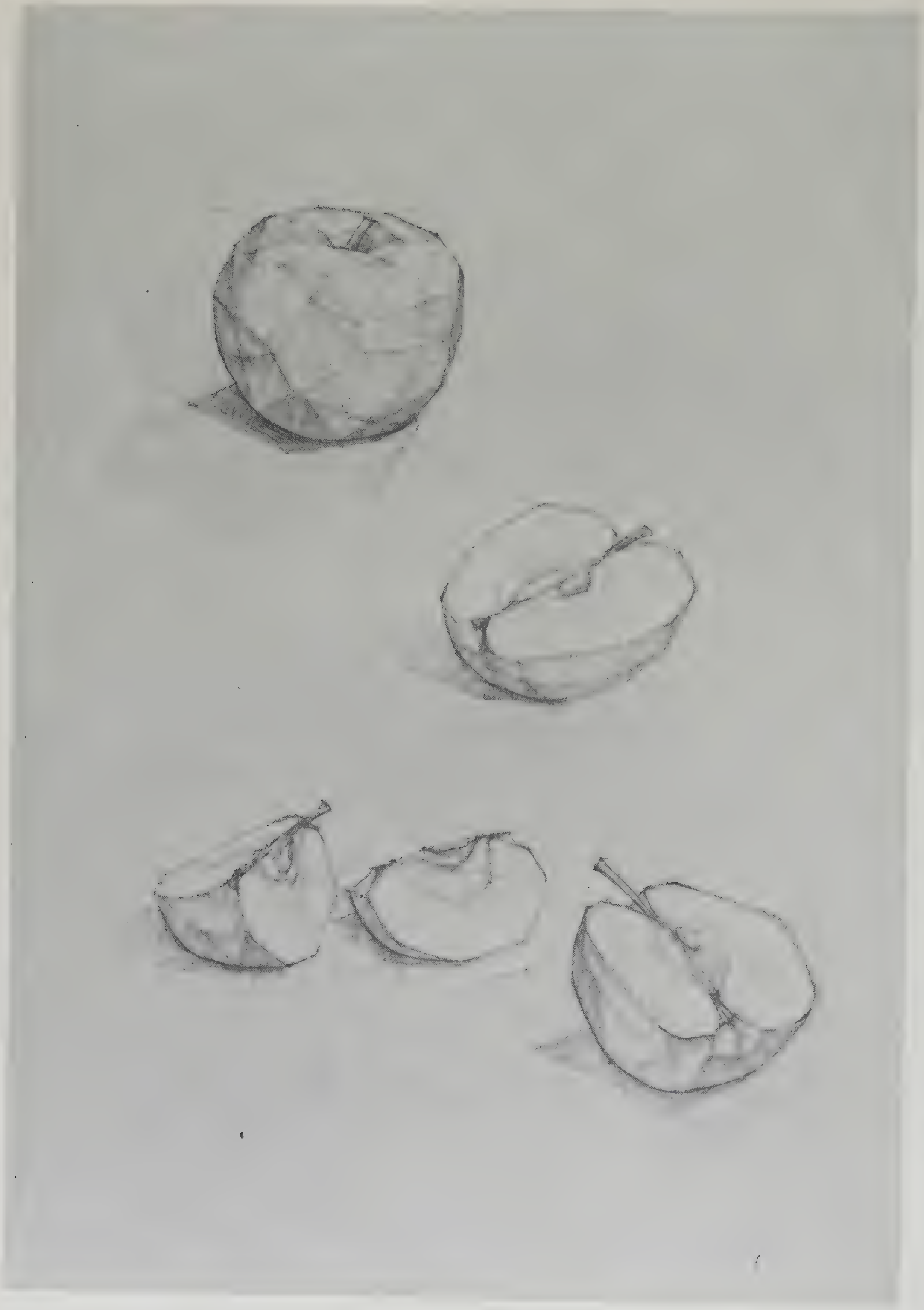


This strong, dark drawing captures the essence of celery, a heavy root. The contrast between curved and stretched surfaces is clarified through explicit tonal gradation.

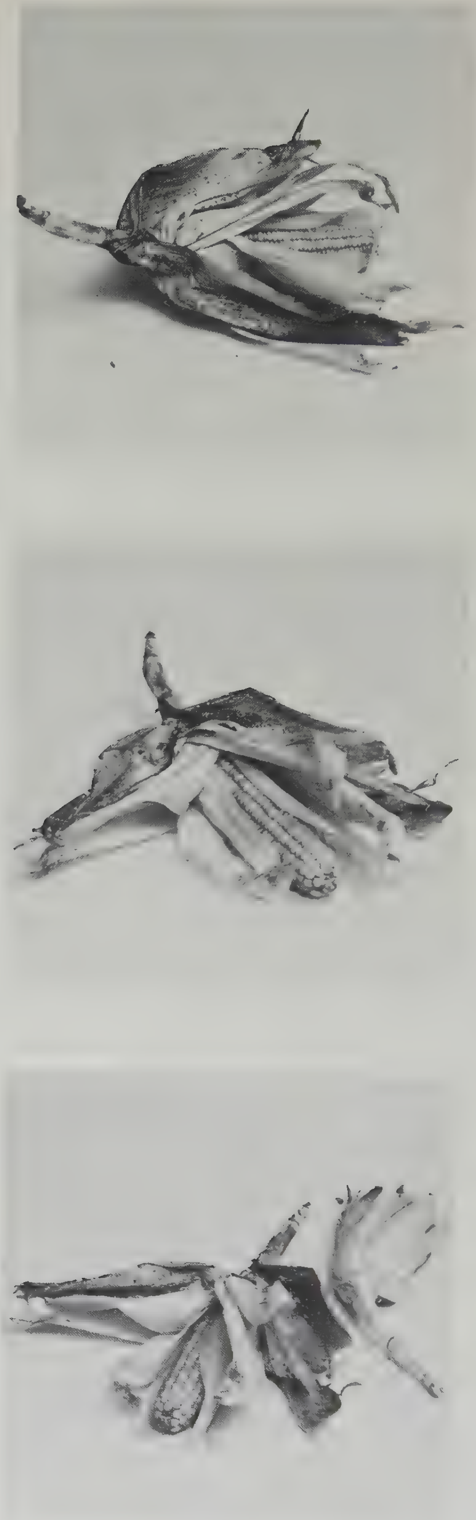


The apple is difficult to represent because of its smooth surface, closed and rounded form, and lack of details. The formulation and modulation of tones must be developed from contours.

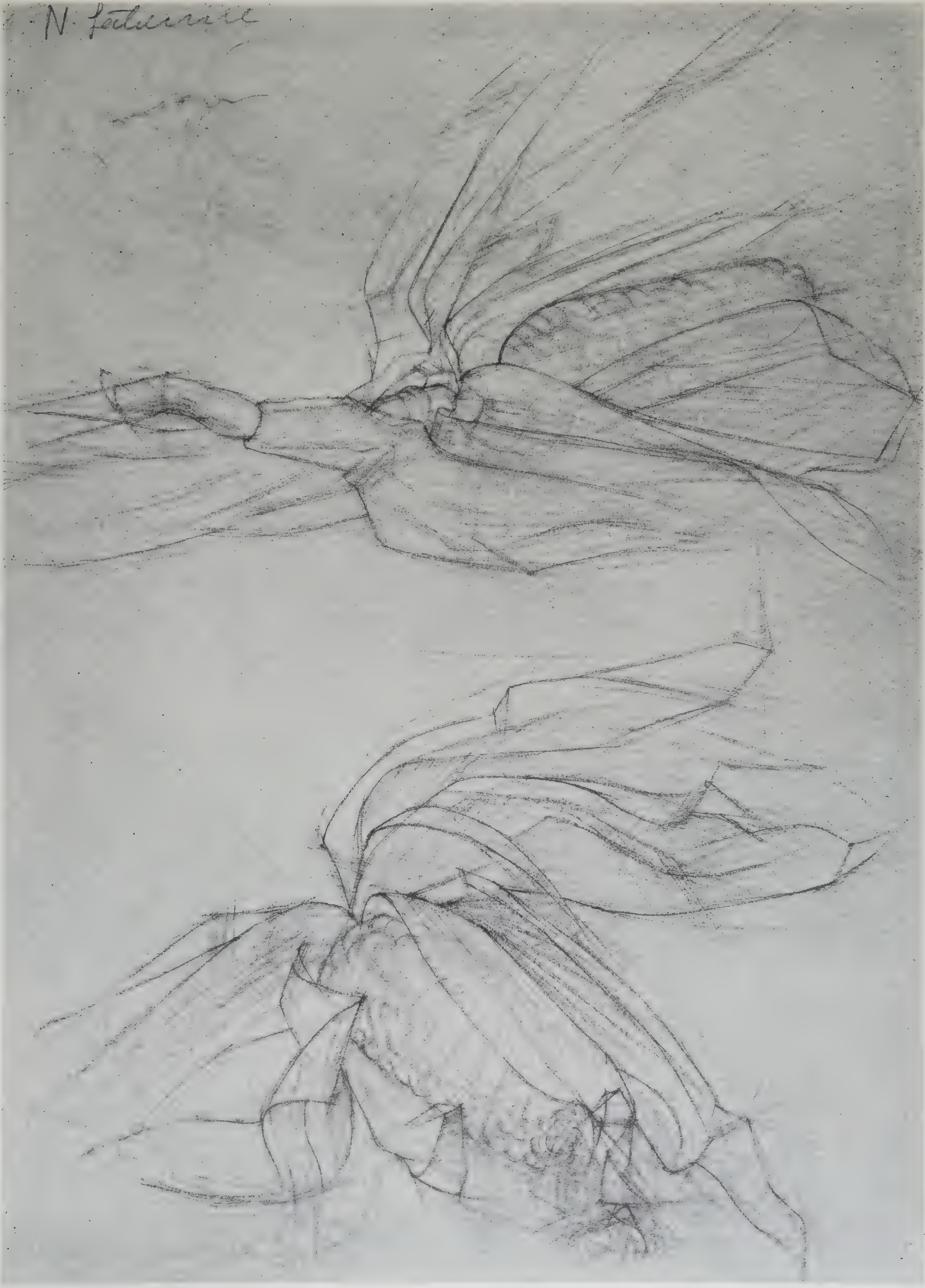
Many interesting details appear by sectioning cauliflower and apple.

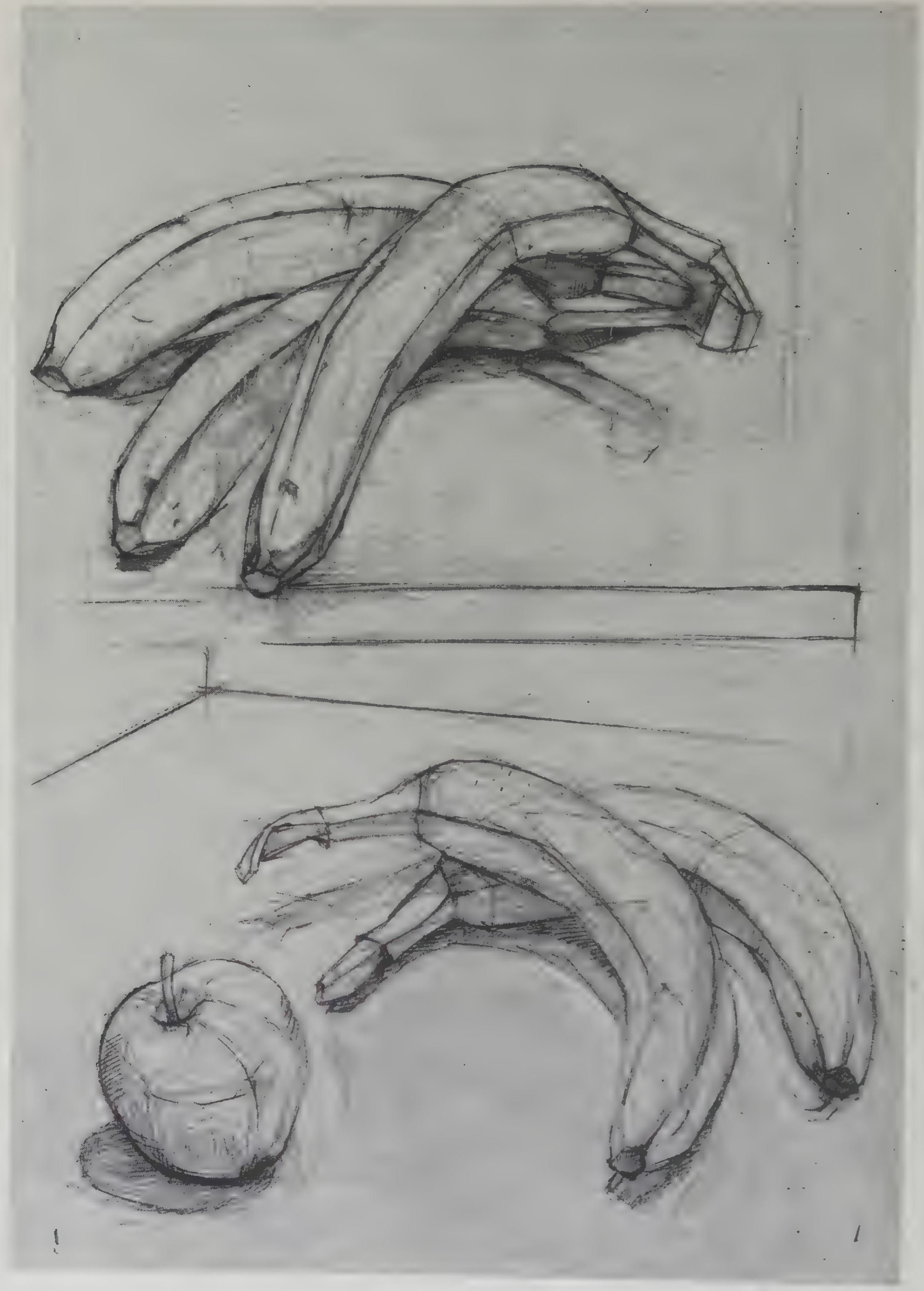


The angular surfaces of a peeled apple suggest a cubistic interpretation. Light and shadow are handled differently through fine cross hatching.



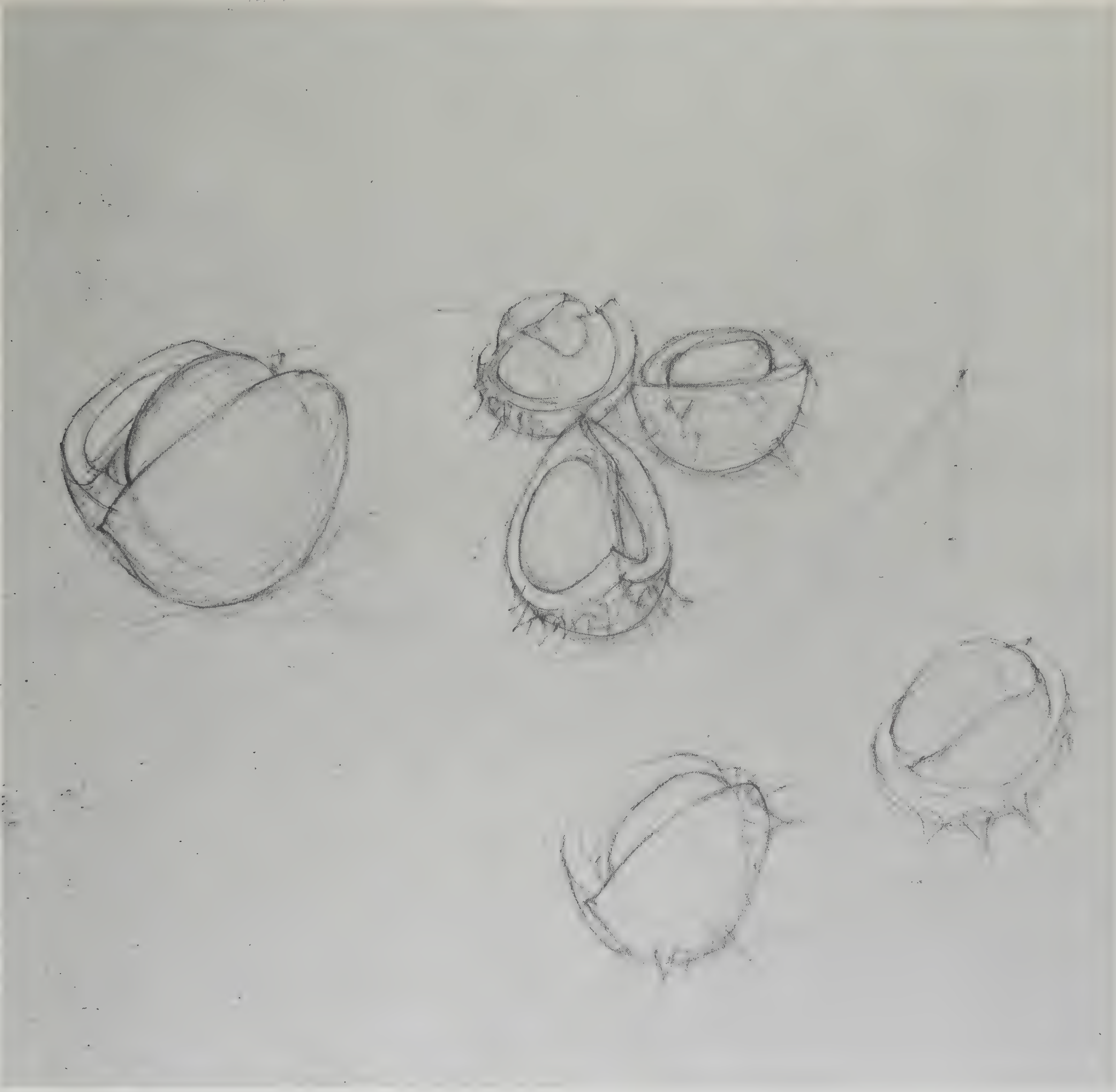
In contrast to the cubistic interpretation of the apple, these studies of a corn cob are bold and dynamic. The leaves are differentiated and rhythmically drawn, while the detailed forms of the kernels are barely indicated. Overlapping surfaces are emphasized through linear accents.


N. falconeri

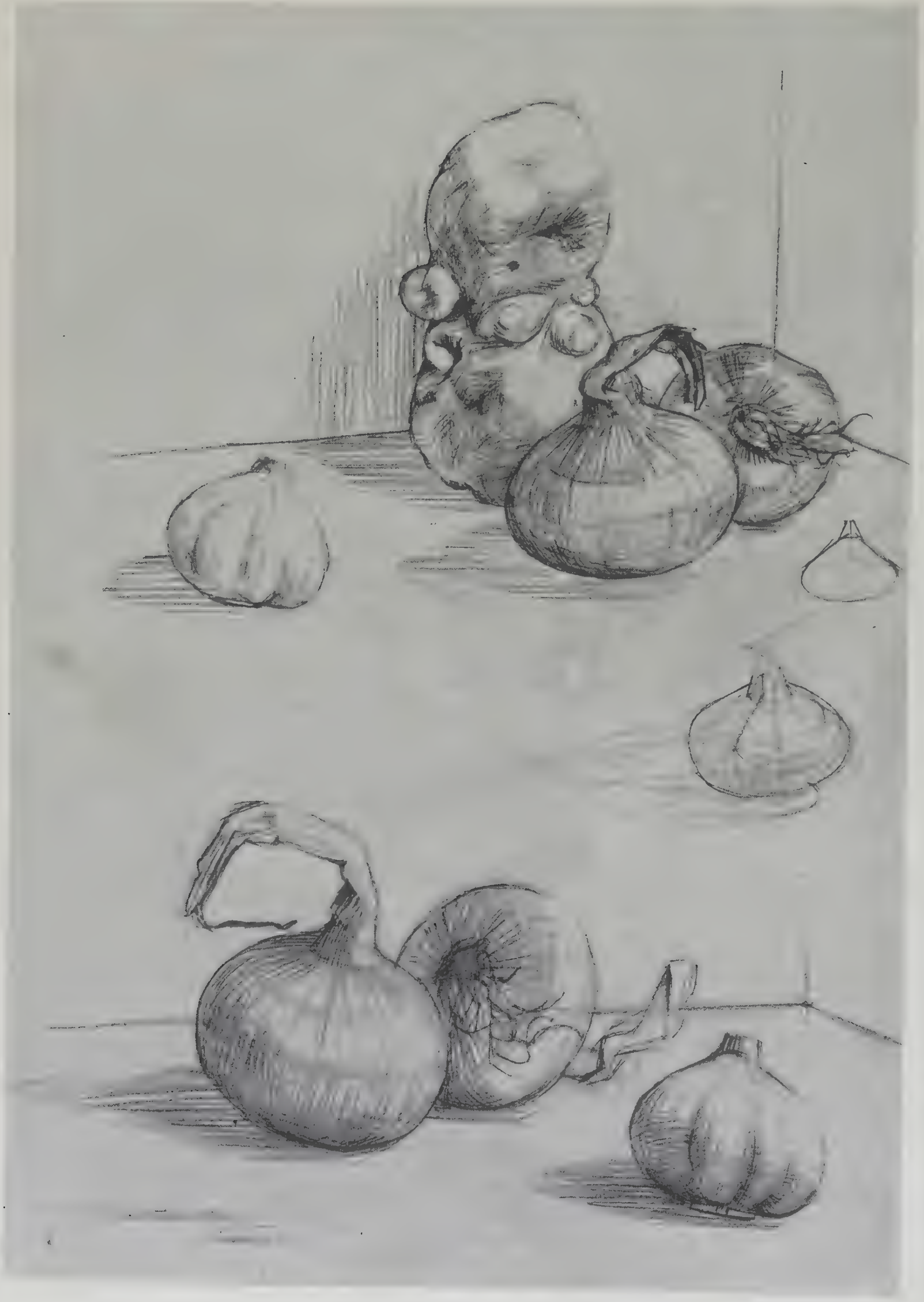


The above photographs show the subject of the study, the drawing in process, with the correct hand and pencil position, and the working environment.

In addition to representing the bananas dimensionally the student tried to express the color and texture of the spotted surface with gray tones and lines.

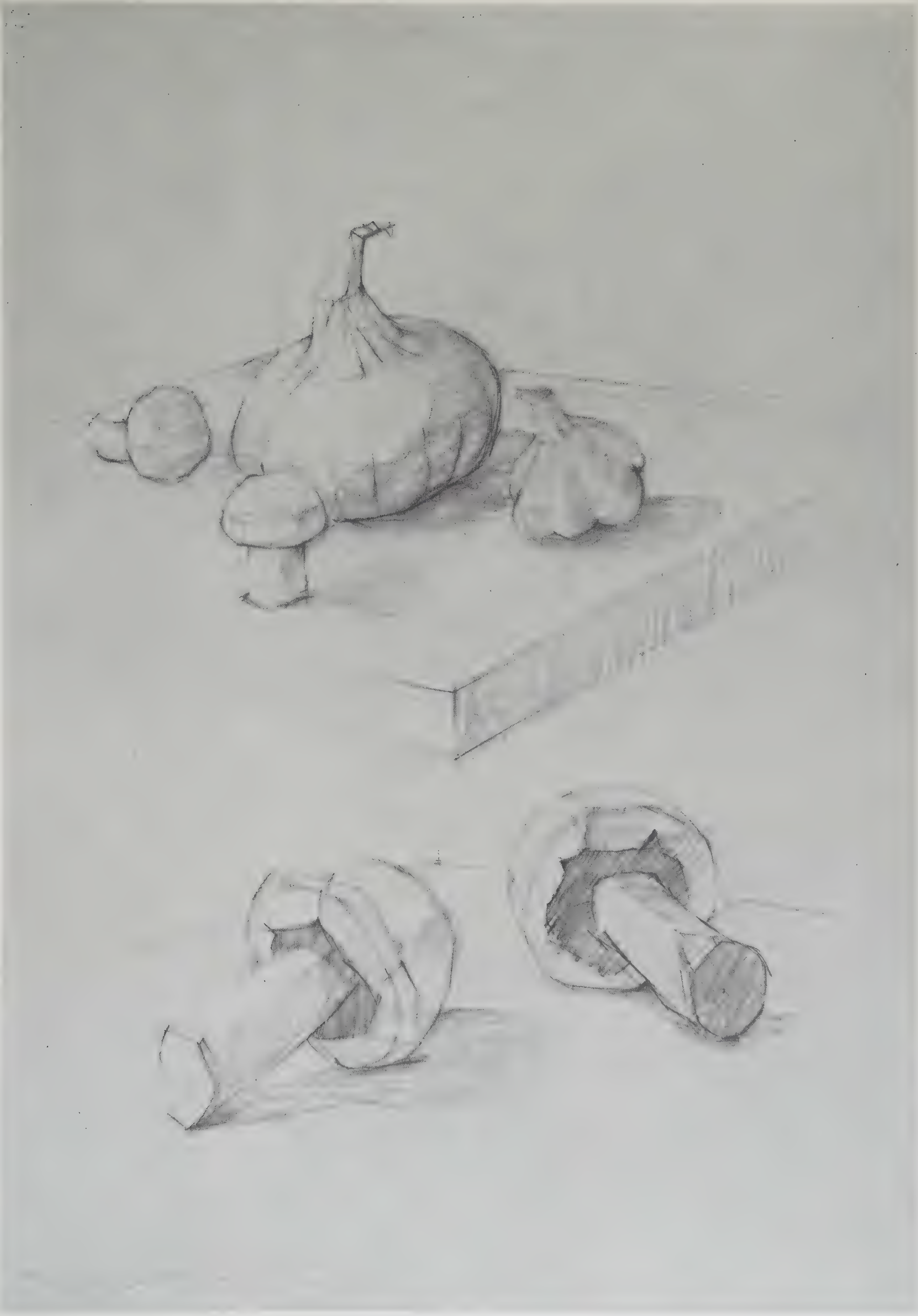


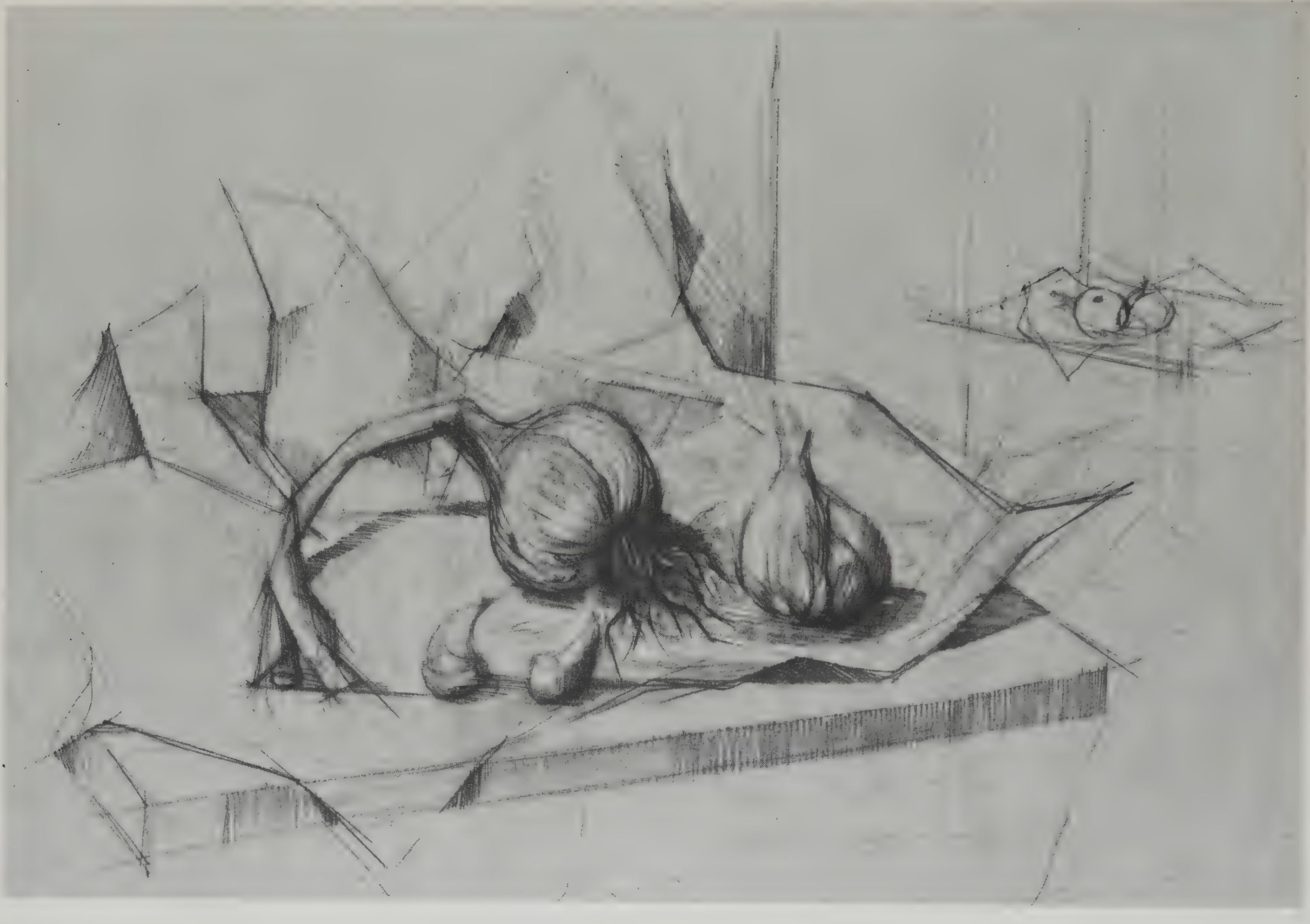
This study is convincing because of its composition, free and confident style, and exciting accentuation. The details and shell of the horse chestnut are executed clearly without appearing trivial. The thorns are partially drawn, leaving the completion of the form to the imagination of the observer. Numerous creative variations are possible with such contrasts.



Groupings of the same or different objects and their composition on the page make increasingly creative demands on the students.

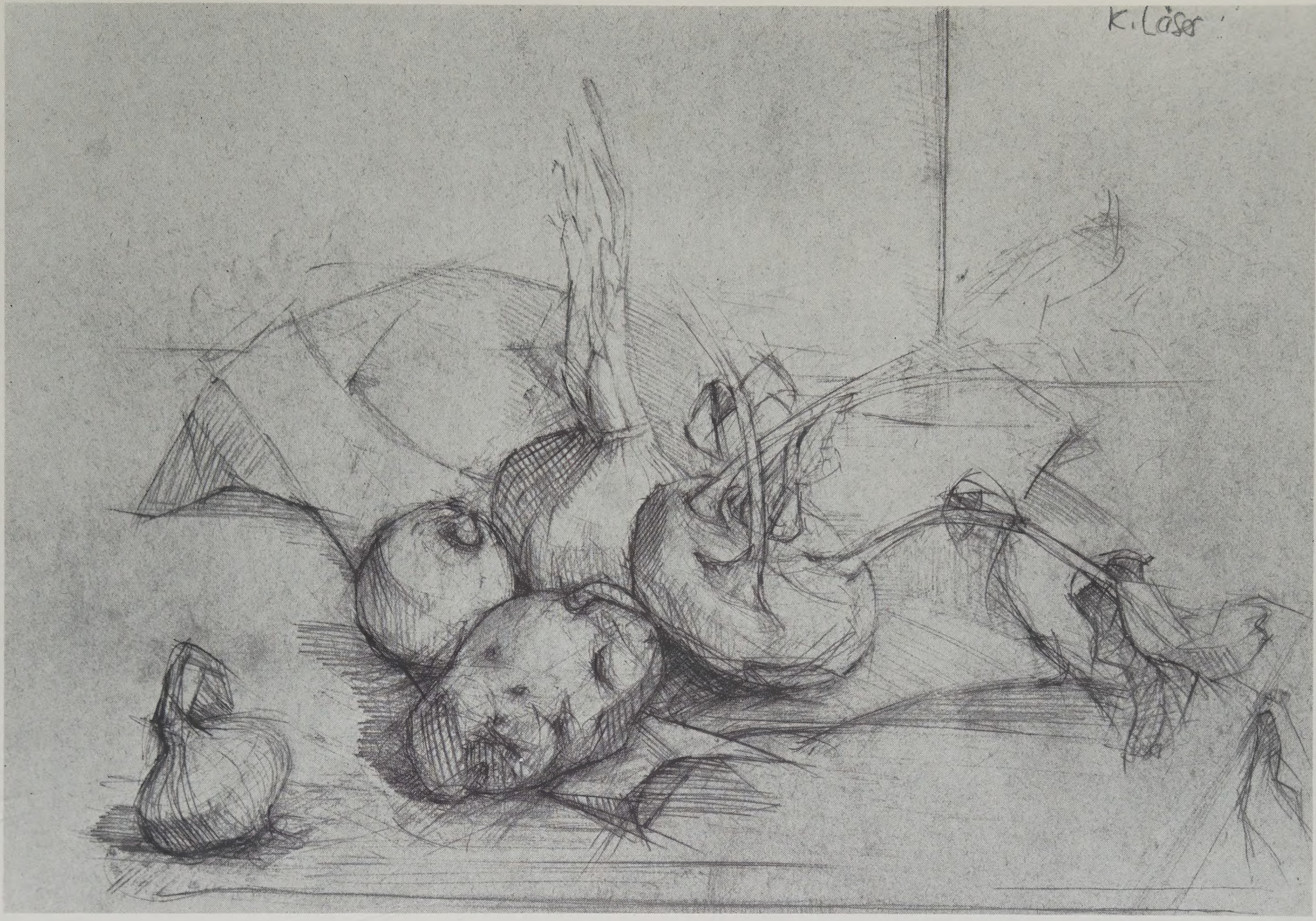
Compositions of contrasted objects.





Different objects can be arranged into a composition on a crumpled sheet of paper or an arranged towel. The representation is expanded from a single object to an entire still life. The light-and-shadow surfaces of the broken forms on the paper can be drawn with cross hatching. Many creative possibilities originate from different drawing treatments of the objects and their surroundings. Personal style and interpretation can be fully developed.

A still-life composition is shown in this example.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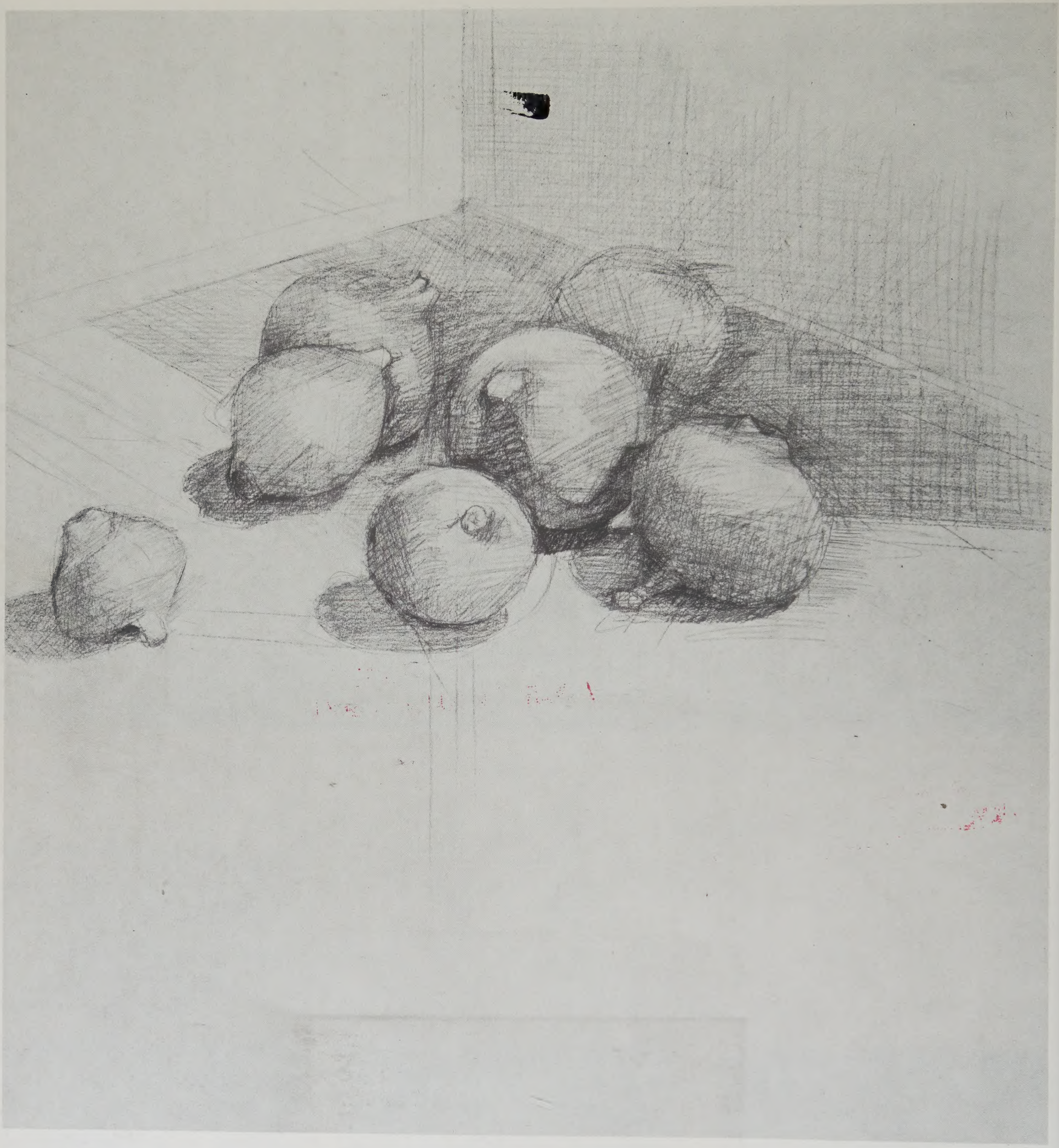

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To be admitted into the program, students must be at least 15 years old, pass an entrance examination, and attend all the classes. The one-year program includes 42 classroom hours per week. All classes are conducted at the school and are limited to a maximum of 24 students.

Most of the faculty members are also professionals in their field, certified specialists who are active in visual, creative areas. Throughout the entire program, the teachers are available for individual or group consultation, which ensures that every student has an equal opportunity for a successful training. The teaching-learning process varies with each course. It can progress in several directions: linear, from simple to difficult principles; punctual, a collection of experiences derived from individual assignments; or complex, an analysis of variation sequences as an insight into the creative process.

The current standards of the program are outlined in this series, and the working procedure is explained clearly and understandably in chronological sequence. In order to clarify the interrelationships among the courses, they are categorized according to the teaching-learning process involved. The entire visual-creative program is presented in four volumes, each of which is a complete unit in itself and provides an introduction, course descriptions, and detailed illustrations.

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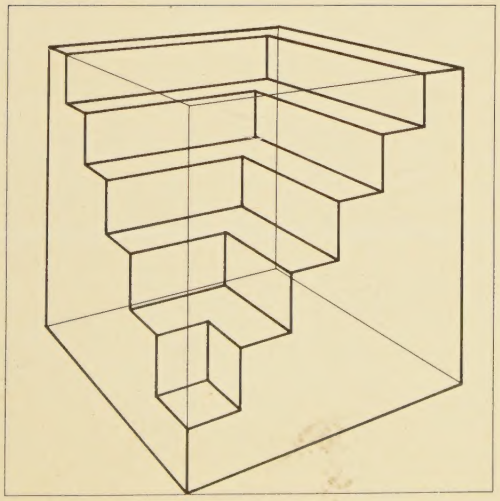

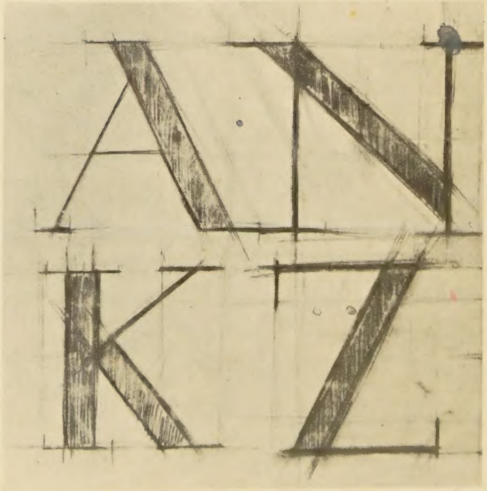

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- Nature Drawing

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Volume 3
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- Color 2

Volume 4
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General Introduction

Kurt Hauert,
Head of the Foundation Program

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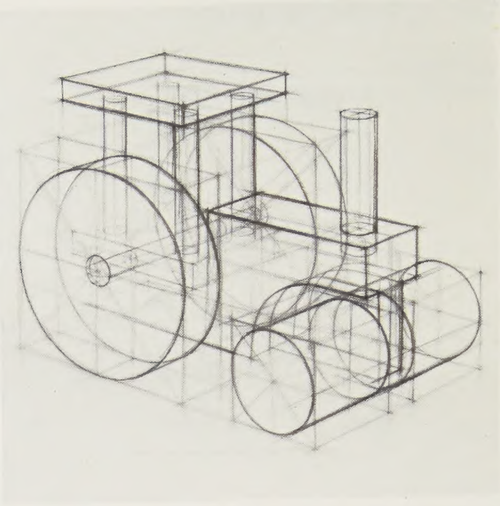
The Foundation Program is based on an objective, developmental educational system over the past thirty years. It disregards fashionable vogues but allows enough freedom to integrate necessary innovations. It offers a model for all teachers, students, and administrators who are interested in a critical, investigatory approach.

In conclusion special thanks are expressed to those who devoted their time and energy to the realization of this work.



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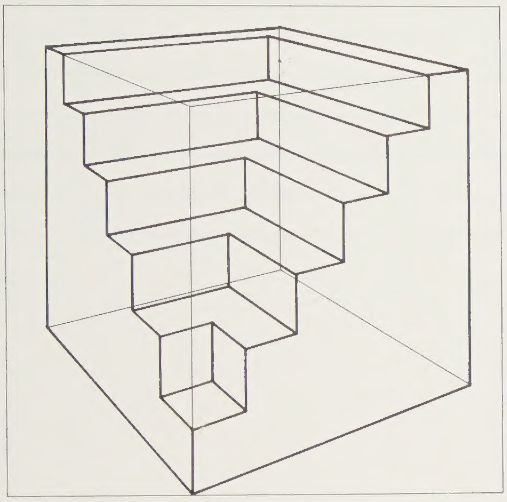

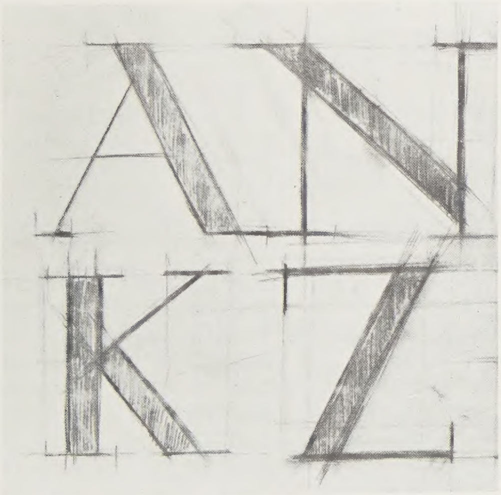

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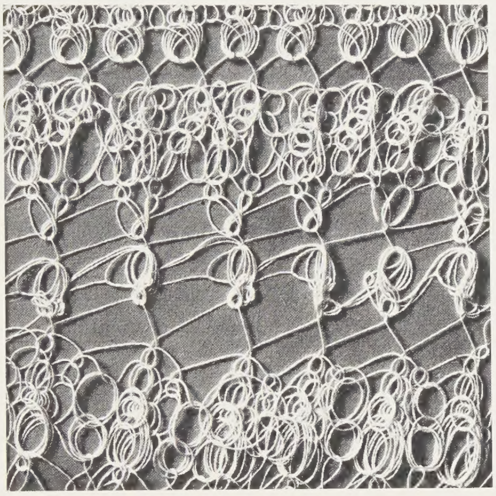
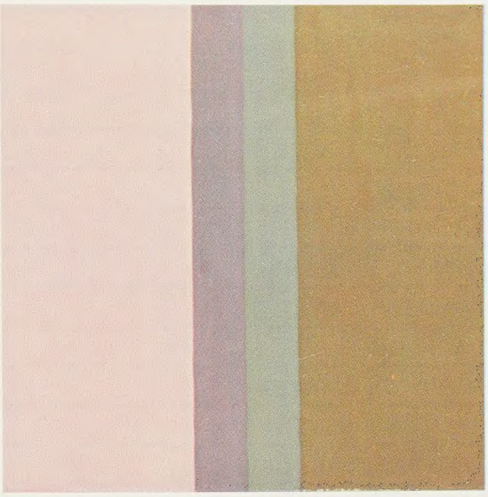
Contributors:
Memory Drawing 11
His A.
Technical Drawing and Perspective 44
Tramèr J.
Lettering 76
Gürtler A.



Volume **3**

Contributors:
Material Studies 11
Hutter J.
Textile Design 42
Hernandez-Moor L. / Kern U.
Color 2 74
Gautschi R. / Pola P.



Volume **4**

Contributors:
Color 1 11
Zwimpfer M.
Graphic Exercises 42
Maier M.
Dimensional Design 74
Grossenbacher M.

Schedule Summer Semester 1975
Foundation Program

	Hours
Graphic Exercises	4
Color 2	3
Color 1	3
Object Drawing	4
Nature Drawing	2
Lettering	2
Memory Drawing	3
Textile Design	2
Dimensional Design	4
Literature, Language	2
Physical Education	2
Information	2
Technical Drawing and Perspective	3
Material Study	3
Object and Museum Drawing	3
	42

Number of faculty in the Foundation Program	26
Number of students in the Foundation Program in six parallel classes	130 ca.

Directorship:

until 1970 Emil Ruder
since 1971 Niklaus Morgenthaler
Head of the Foundation Program:
since 1971 Kurt Hauert

Faculty of the Foundation Program

Beck, A.	Economics
Biesele, I.	Graphic Design
Bollin, M.	Sculpture
Bürgin, G.	Decoration
Burla, J.	Sculpture
Eya, L.	Architecture
Gautschi, R.	Painting
Grossenbacher, M.	Sculpture
Gürtler, A.	Letter Design
His, A.	Painting
Hutter, J.	Painting
Keller, T.	Painting
Kern, R.	Painting
Kern, U.	Drawing
Klotz, L.	Painting
Maier, M.	Graphic Design
Mengelt, C.	Graphic Design
Mengelt, M.	Graphic Design
Pola, P.	Painting
Schäfer, E.	Drawing
Sommer, H. P.	Graphic Design
Thomann, M.	Language
Tramèr, J.	Painting
Von Tomei, J.	Graphic Design
Zwimpfer, G.	Graphic Design
Zwimpfer, M.	Graphic Design

Bernoulli, L.	Architecture	1972–73
Bühler, G.	Drawing	1968–69
Ganahl, K.	Press-editing	1966–67
Gruber, A.	Sculpture	1969–70
Hartmann, H.	Drawing	1968–69
Hauert, K.	Drawing	1969–70
Hernandez-Moor, L.	Textile Design	1972–73
Keller, J.	Drawing	1974–75
Lienhard, E.	Sculpture	1972–73
Messerli, E.	Painting	1972–73
Ryser, F.	Painting	1973–74
Stettler, G.	Painting	1967–68
Stettler, P.	Painting	1974–75
Sulzbachner, M.	Painting	1968–69
Vollé, R.	Architecture	1968–69
Vieira, M.	Sculpture	1968–69
Weidmann, H.	Painting	1966–67

Volume 2

Memory Drawing

Technical Drawing and Perspective

Lettering

As in freehand drawing, the courses described in this volume are traditional media of western culture. They are very different in their content, appearance, and function. As means of communication they are based on the concepts: the representation of creative imagination and interpretation from the pictorial contents; the constructive, readable representation from mathematical discipline and the sequence of letter characters as a visual translation of language.

The purposes of the courses are to develop sensitivity to pictorial, spatial, and constructive imagination and to differentiate form, color value, composition, rhythm, and abstraction. Mastery of skills and techniques is achieved through continual investigation of the actual contents of the subject. As in freehand drawing, the teaching method is structured from simple to complex principles.

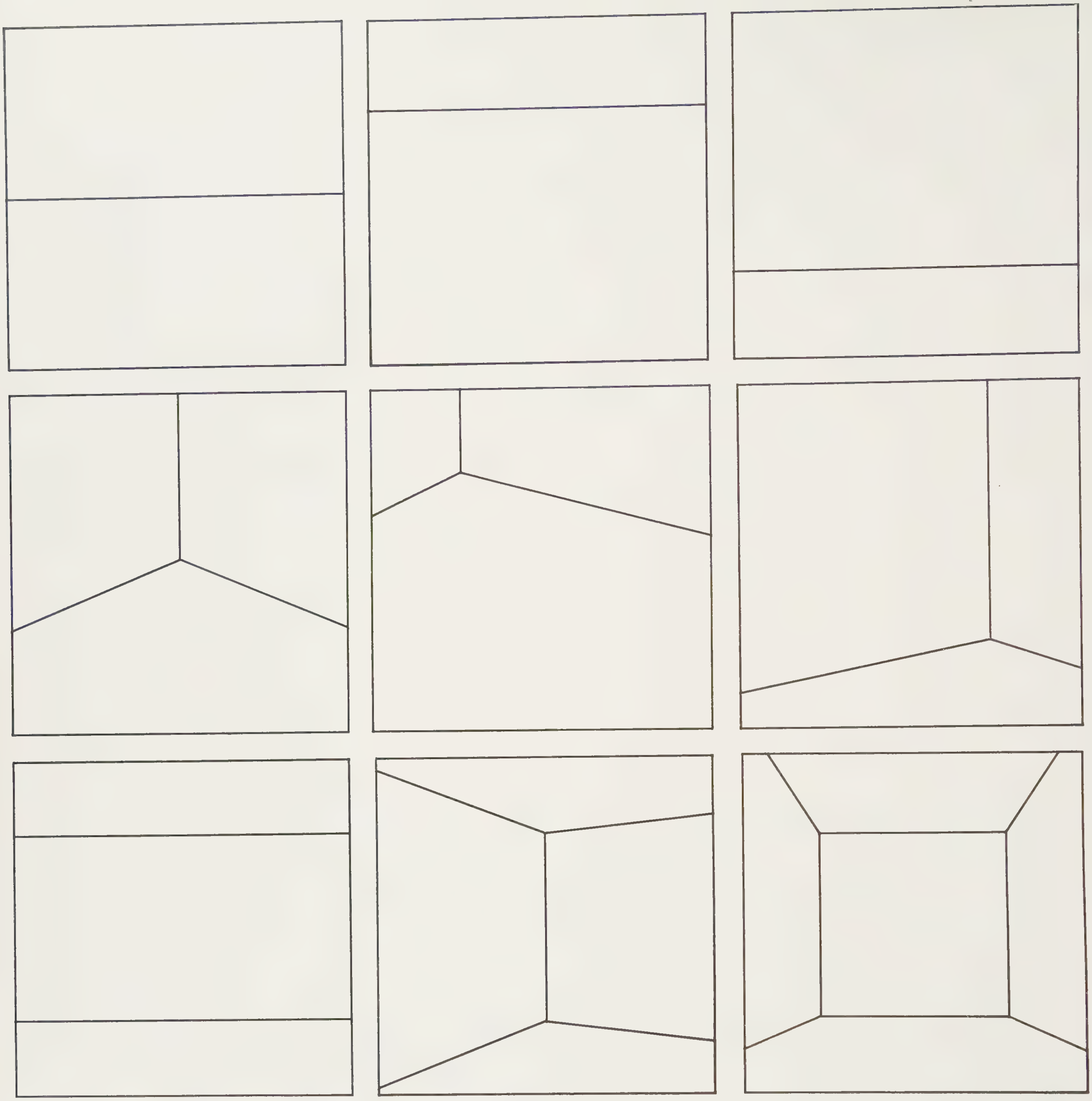
The elementary exercises in each subject are interrelated. Any uncertainty or lack of clarity is obvious at each phase of the investigation and can be recognized and corrected immediately under the guidance of the teacher. Comparative control of the student's work and critical evaluation of the working process expand the individual's consciousness and develop his faculty for independent judgement. The experience and knowledge derived from the individual exercises are prerequisites for further development. As in freehand drawing, the learning process involves continual linear differentiation.

Experience from the parallel taught subjects, color, freehand drawing, and perspective is applied in this course. In contrast to freehand-drawing courses, the students do not work from man-made or natural objects. The student learns to rely on his imagination and sensitivity. Creative ideas are derived from experience, and visual knowledge from memory and imagination. Ideas are abstracted into pictorial, dimensional representations.

In the elementary exercises themes supplied by the teacher are developed, scenes from daily life that everyone has seen or experienced: for example, table and chairs, geometric toys, breakfast, working table, or wash on the clothesline. Representation of the human figure is deliberately avoided.

The goal is to achieve an interesting unity of composition. The following compositional questions and interrelations are investigated and clarified: volumetric appearance, division and depth of space, foreground-background relationship, overlapping, degree of perspective, kind and number of objects in a particular environment, grouping, contrast (light-dark, large-small, linear-surface), and formal elements (horizontal, vertical, diagonal, round).

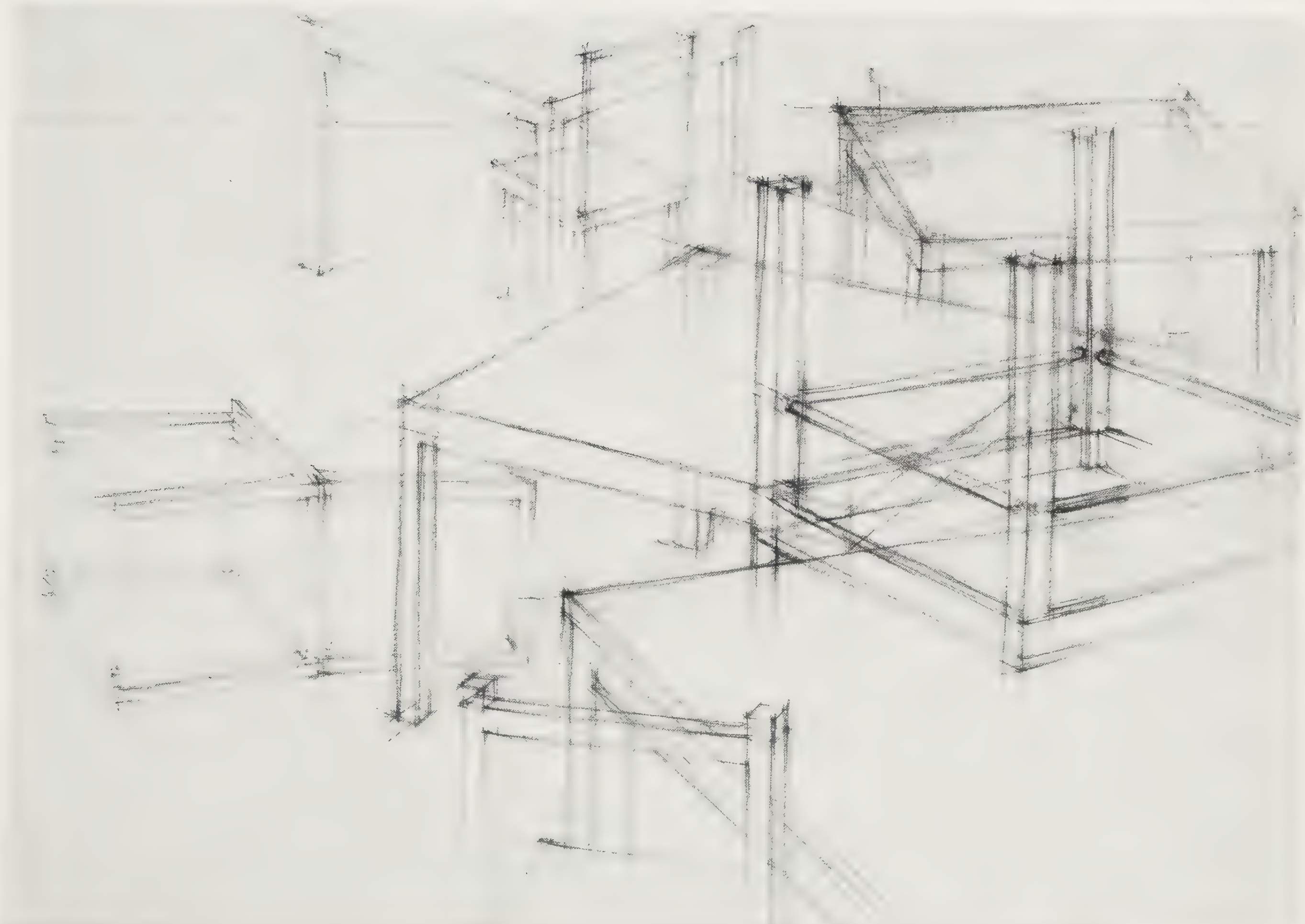
In the first exercise a table and chairs or geometric toys are used as subjects. Many variations of each theme are sketched in pencil within a small format (10.5 × 14.8 cm). With the help of the teacher one of the sketches is chosen and enlarged (to 42 × 29.7 cm) in a freehand drawing. In the following exercises, a selected sketch serves as the formal foundation for color studies in tempera. Composition and color relationships are now considered. At first the number of colors is consciously limited to two pure colors, black, and white. Color variations are examined in gray-value studies in order to understand the light-dark effects of the composition. Colors can be mixed or changed for each sketch. One of the sketches is enlarged and refined. A further discipline involves remixing the colors: the effect of the same color is different because of the quantity change in the enlargement, and the spontaneity of the sketch is often lost. The color values in the sketch must be subtly translated in the enlargement. The results are discussed and compared in the classroom to expand the student's personal pictorial imagination. Creative experience from memory drawing is one of the preliminary steps toward illustration.

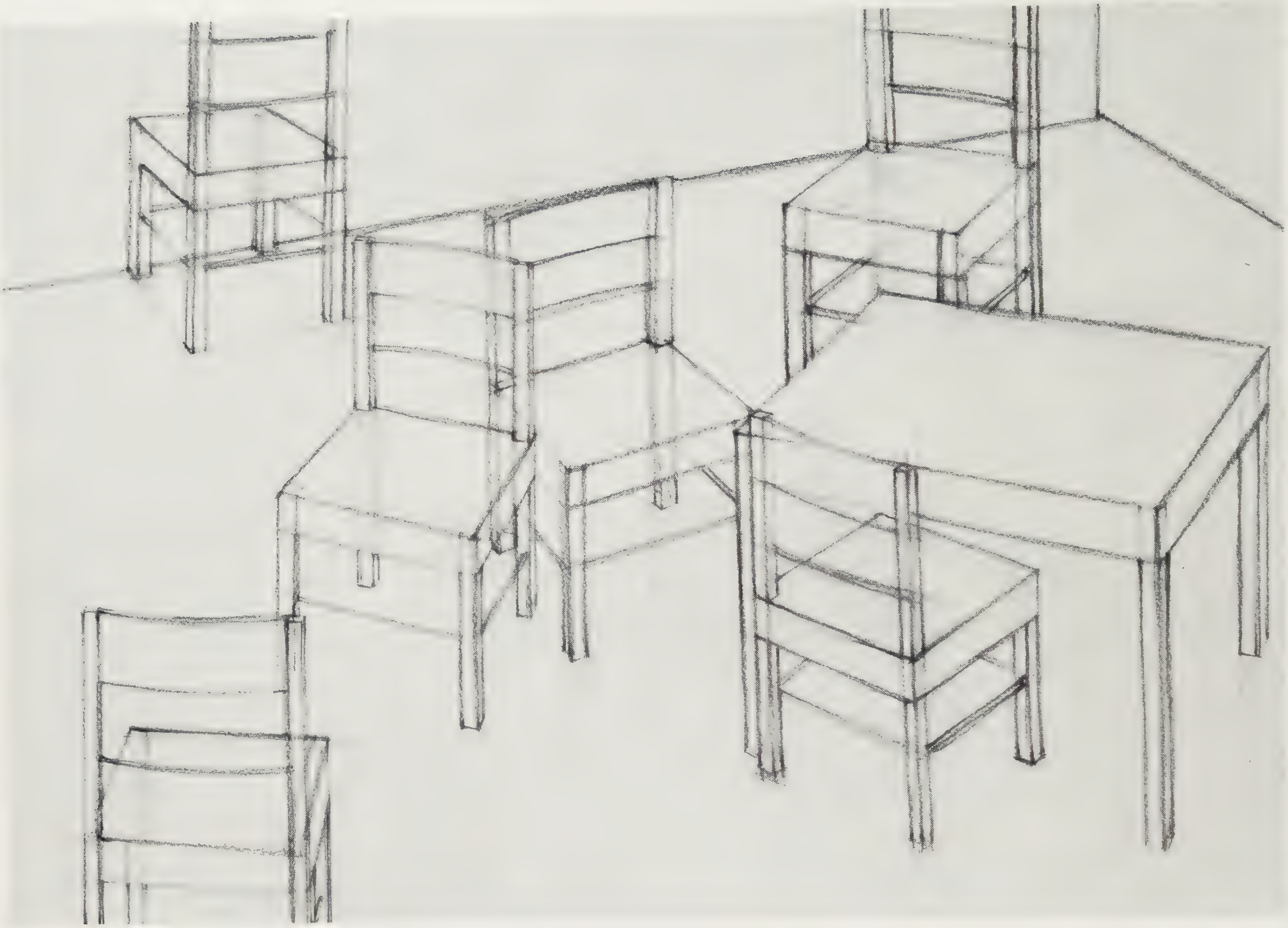


These examples serve as the basis for further sketches. They show how dimensional appearances can be represented by simple organization of the format.

The top row shows:
a wall and floor in the same relationship;
a small wall with a large floor surface;
and a large wall with a small floor.
The middle row shows:
two walls in the same relationship, a tabletop view of a volumetric corner developed with diagonals;
a large floor with a small wall;
and a large wall with a small floor.

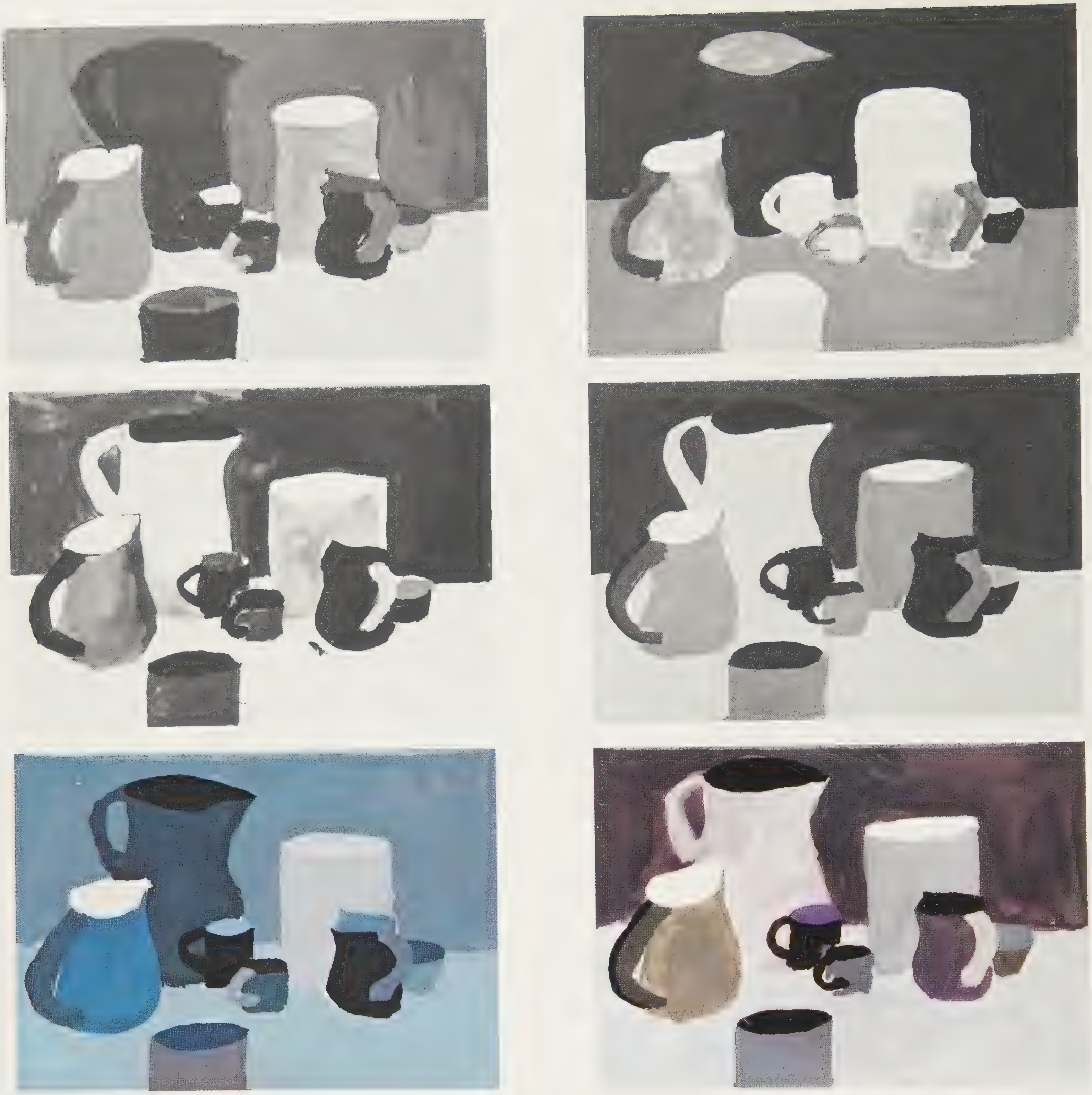
The bottom row shows:
a ceiling-wall-floor arrangement;
an equal-sized ceiling and floor with a volumetric corner of different-size walls;
and a frontal view of a ceiling, floor, and three walls (central perspective).



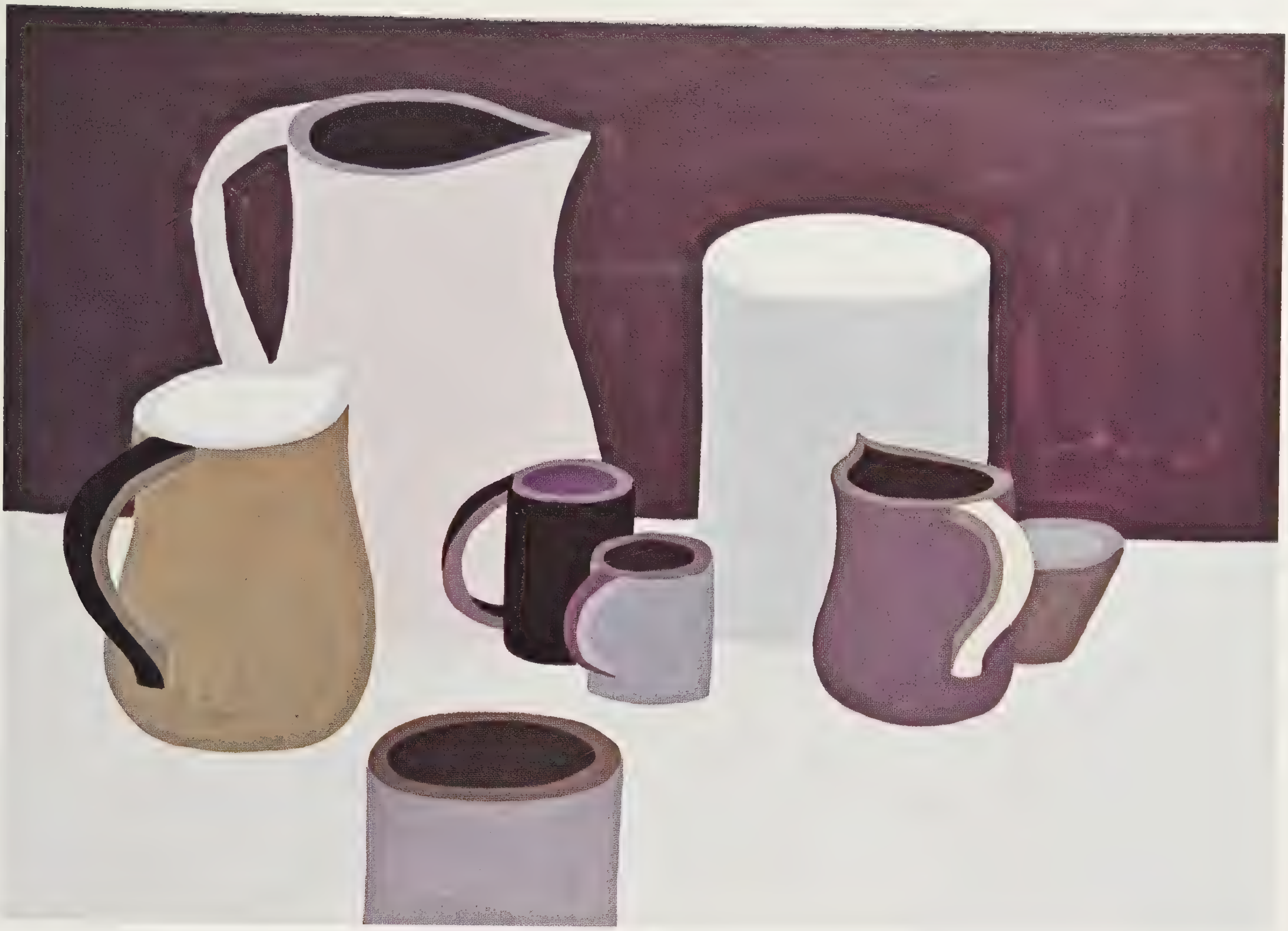


The illustrations here and on the preceding page show the work of different students on the theme table and chairs in space, executed in a large format. The three pencil drawings are carefully developed and differentiated in linear treatment, interpretation, and composition.

The example on the right was done by a student who had difficulties in sketching and developing a composition. It is produced with forms cut out of black paper, and, unlike the pencil drawings, the perspective is incorrect.

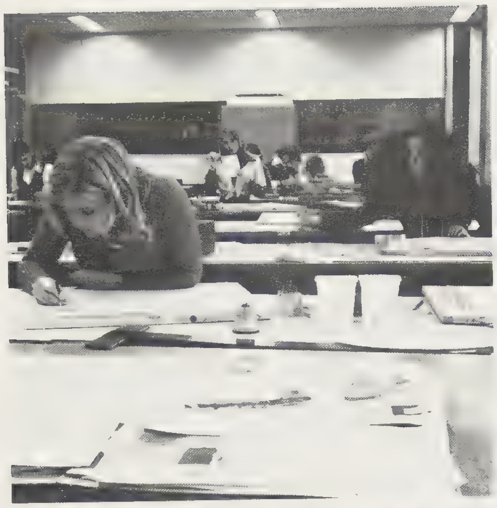


Gray-value studies and color sketches on the theme breakfast, done in a smaller format, are shown here. The number of colors in each sketch is limited to two bright colors, black, and white. The color study on the right was selected for enlargement.

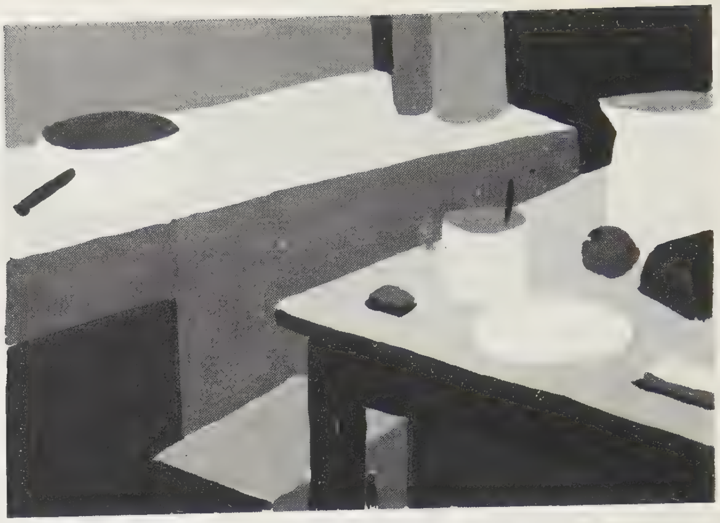


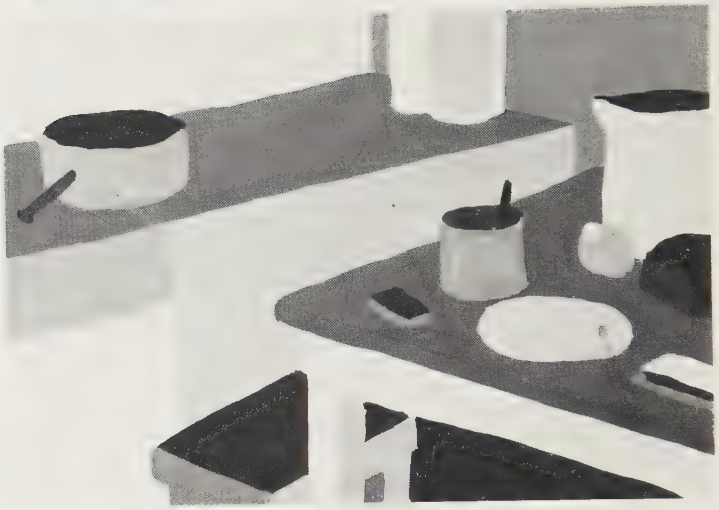
The enlargement of the sketch is shown here. The colors used in the sketch should be remixed as exactly as possible and transferred directly to the enlargement. They often appear differently in the final.

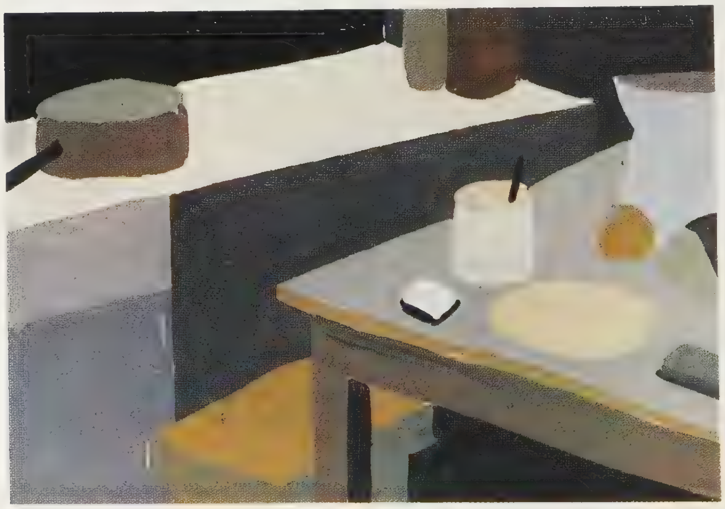
Here and on the following ten pages a comparison of work on the same or on a similar theme done by four different students demonstrates the variation in personal imagination and interpretation.



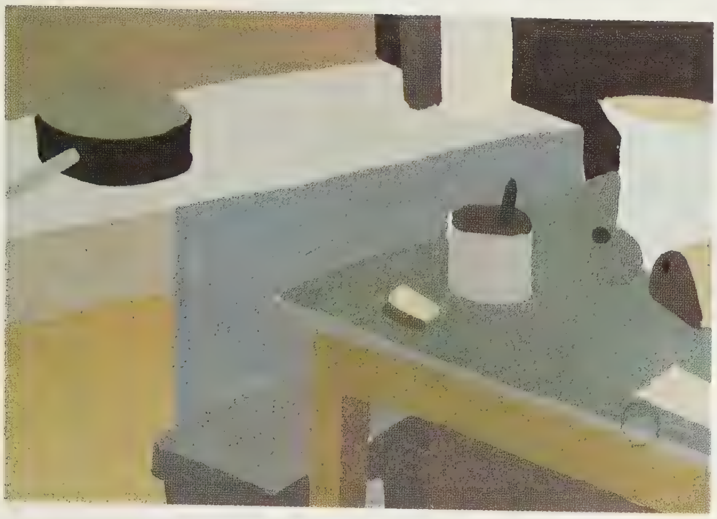
These photographs show the working area, the teacher, and students at work.

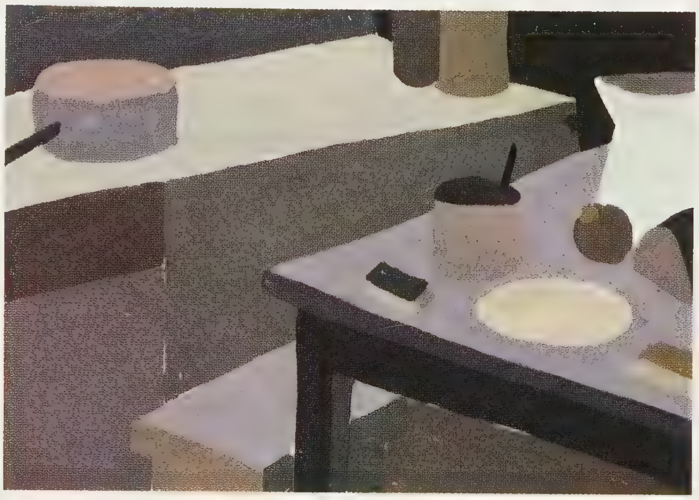


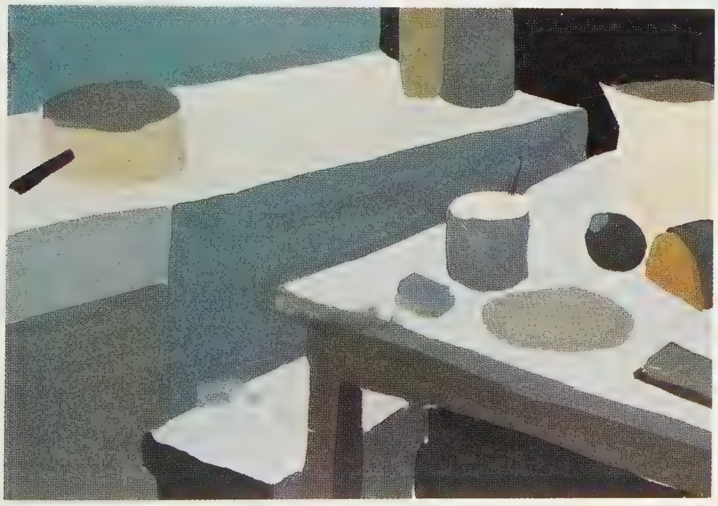


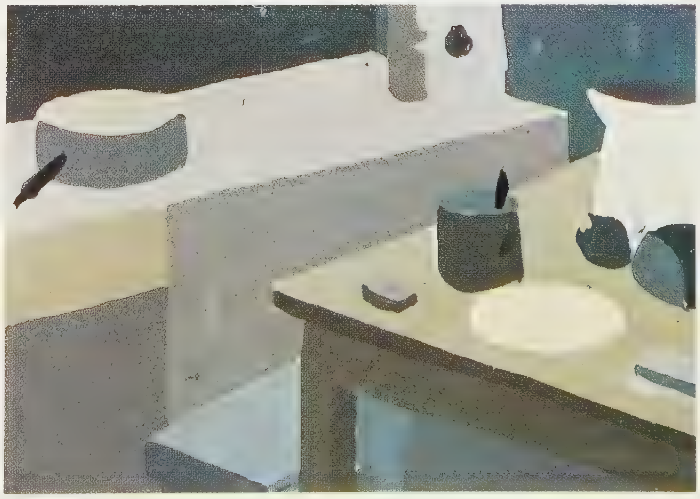


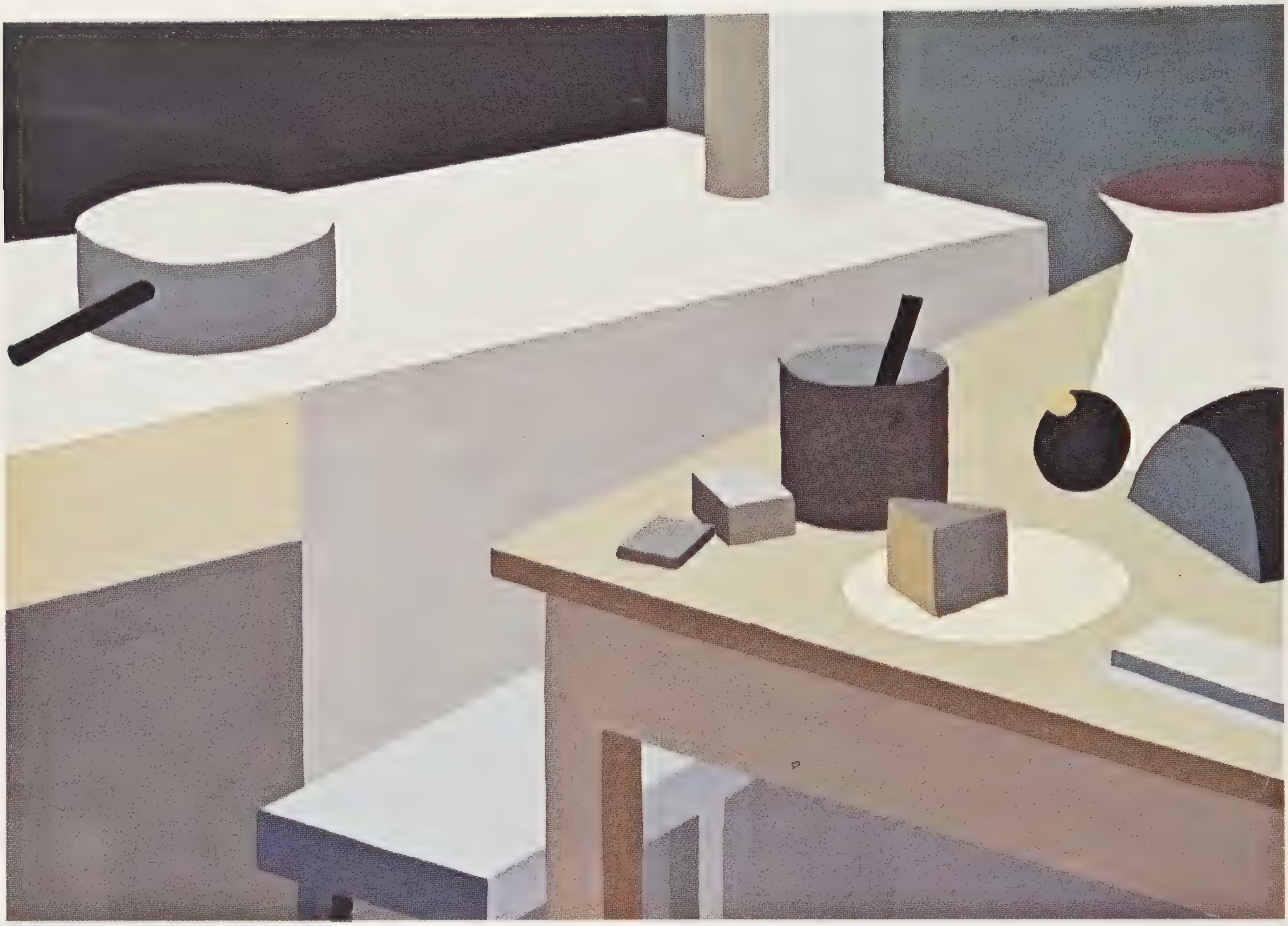
Gray-value studies and color sketches on the theme kitchen table are shown in a concentrated composition. Variations from light to dark are exceptionally clear, and each one gives a different feeling. The color study, below right, was selected for enlargement.





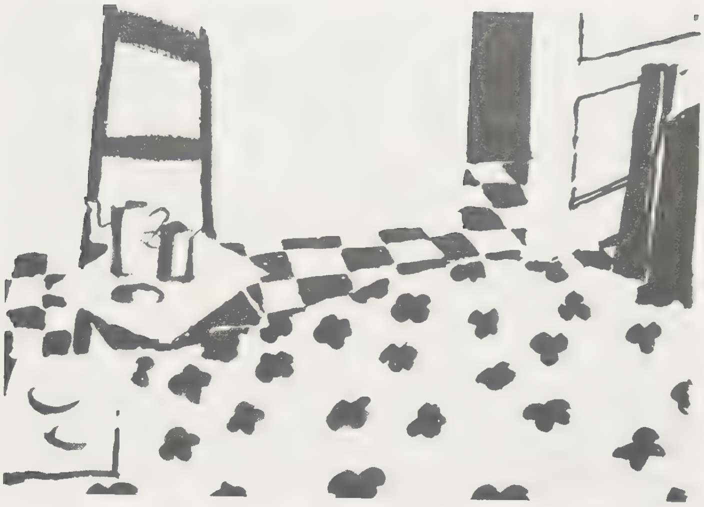


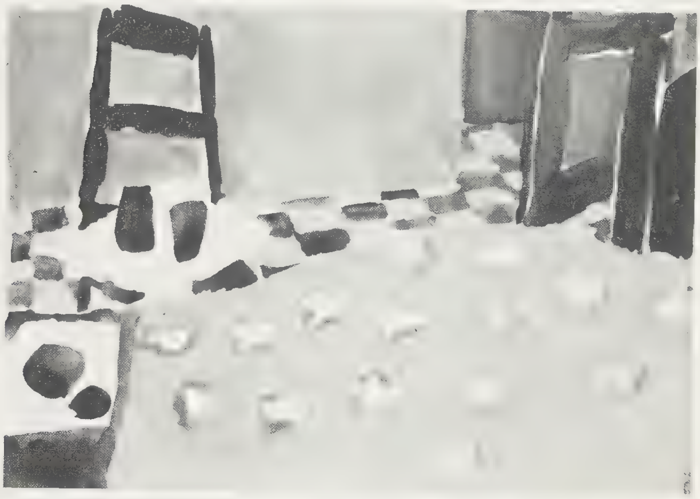


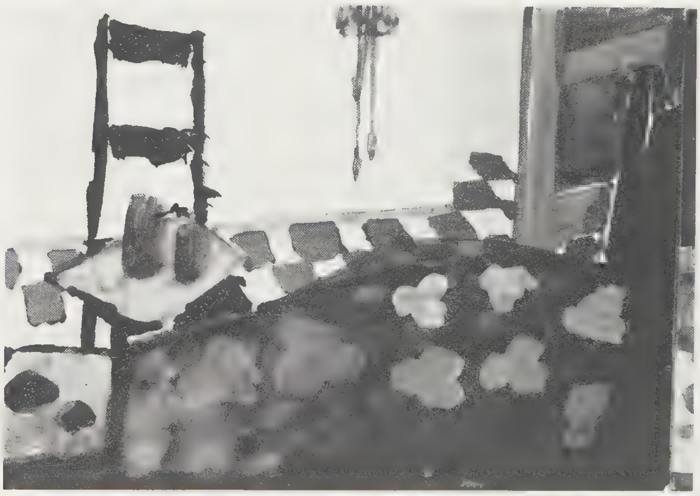


The enlargement of the sketch is shown here.

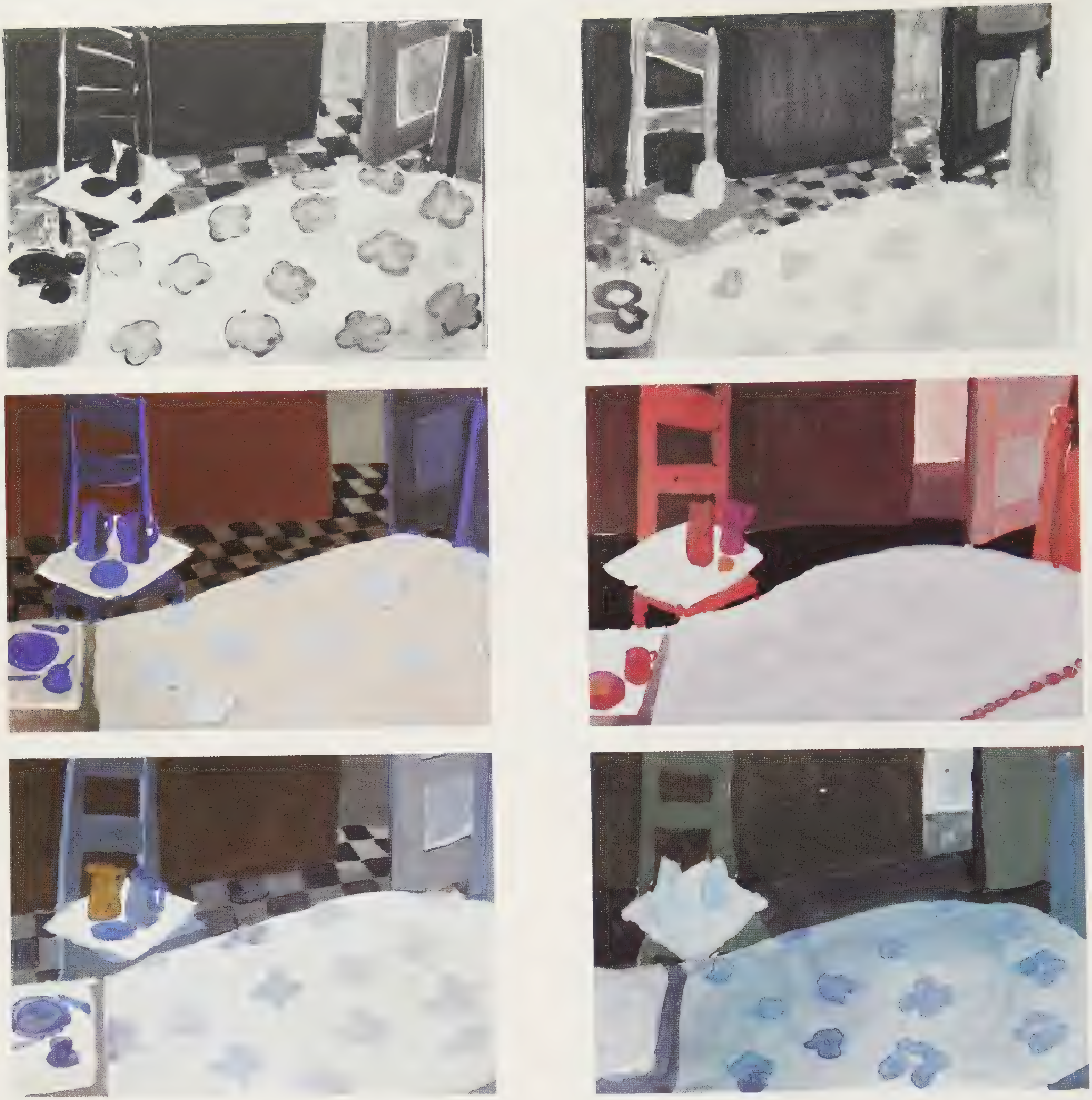
The students are sketching in pencil, working on color sketches, and making enlargements.



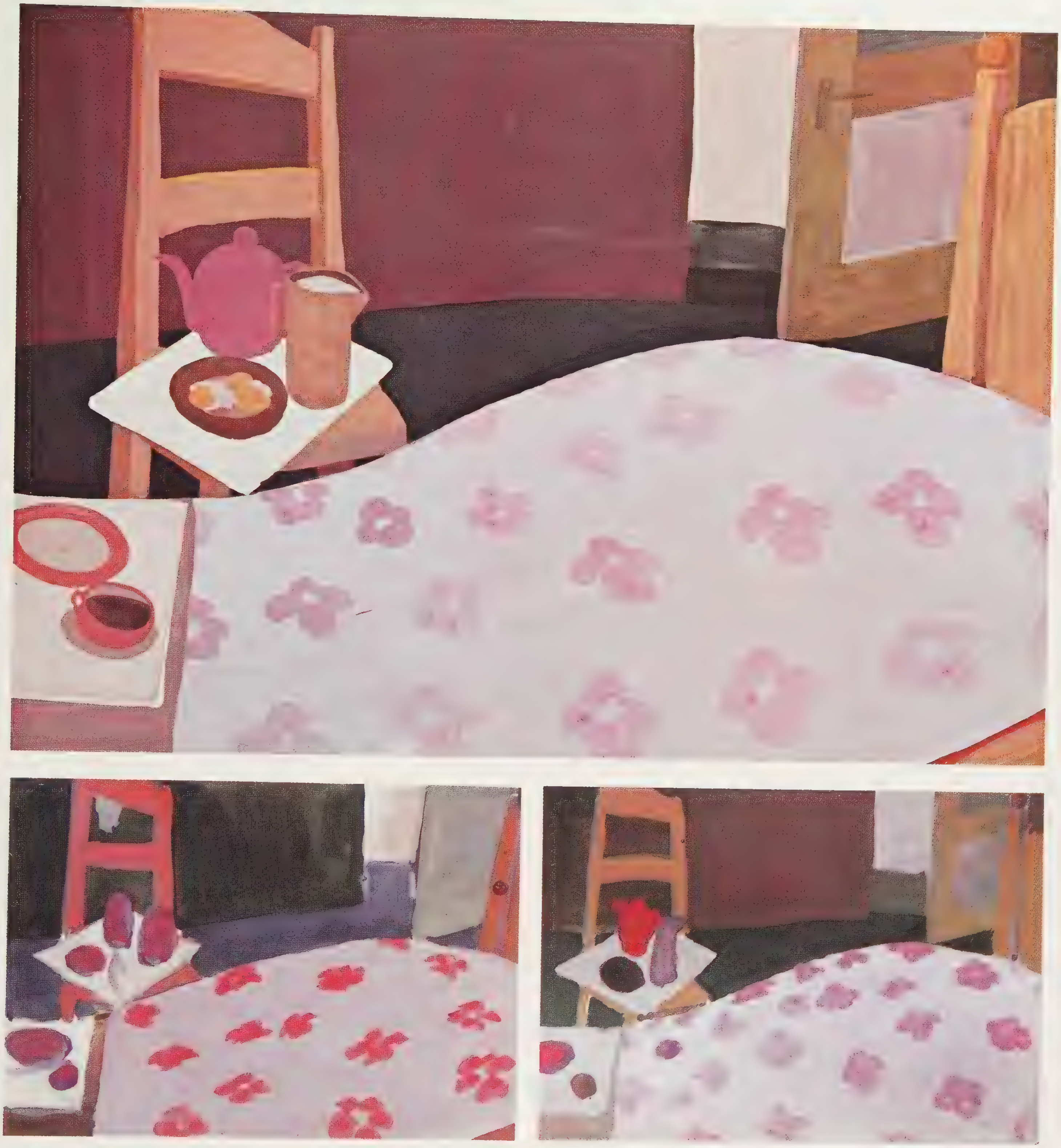




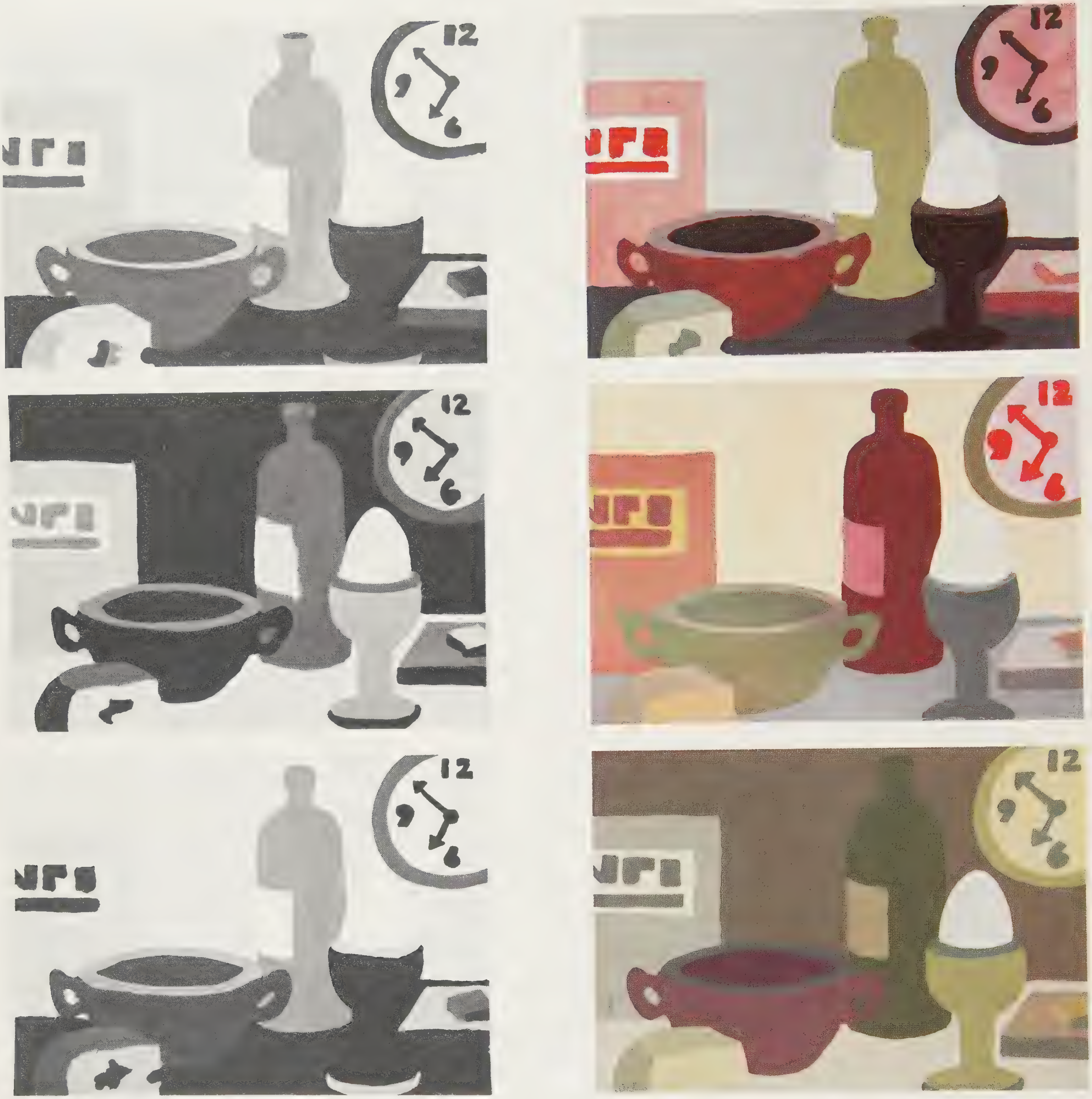
These three sketches on the theme breakfast were done directly with the brush, using black, white, and gray tones.



In these sketches on the same theme the differentiated treatment of the foreground and the checkered floor is particularly interesting. In this interpretation of the theme the desired wish appears to be breakfast served in bed.



Two bright colors, black, and white were used for this enlargement. Both color sketches were selected for enlargement because of the spontaneous working method and the partially glazed application of the paint.



Three gray-value studies and color sketches on the theme breakfast are shown here. The color sketches were executed in the same two colors, black, and white. The student developed a large number of possibilities by utilizing various mixing combinations. Individual objects advance or recede; the letterlike forms, numbers, and striped wallpaper are decorative elements.

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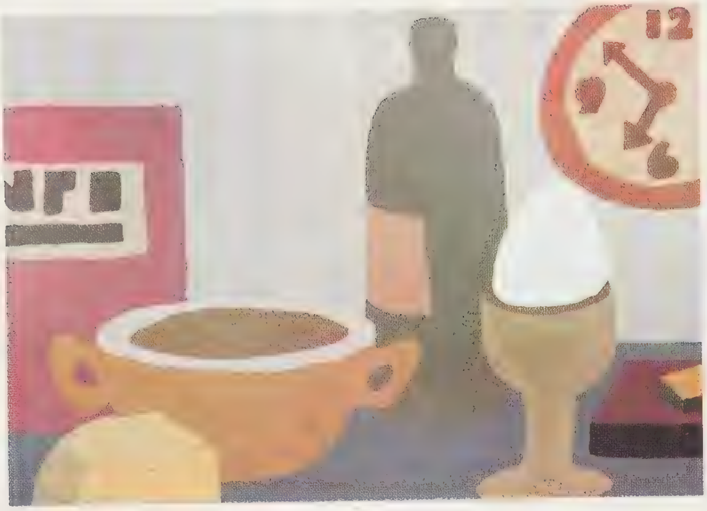

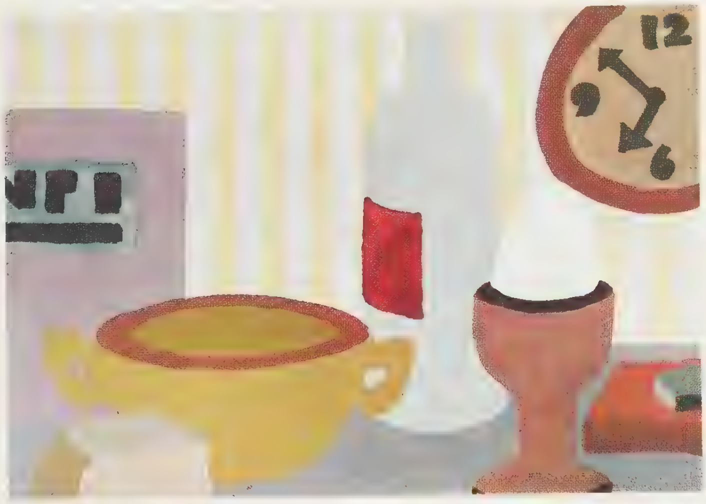

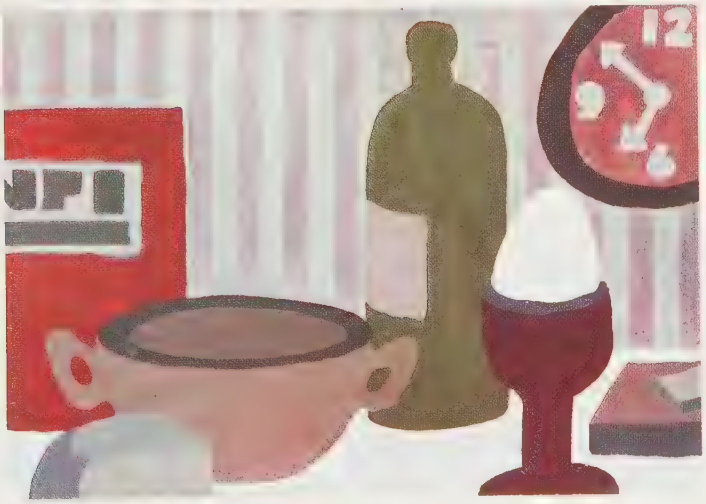

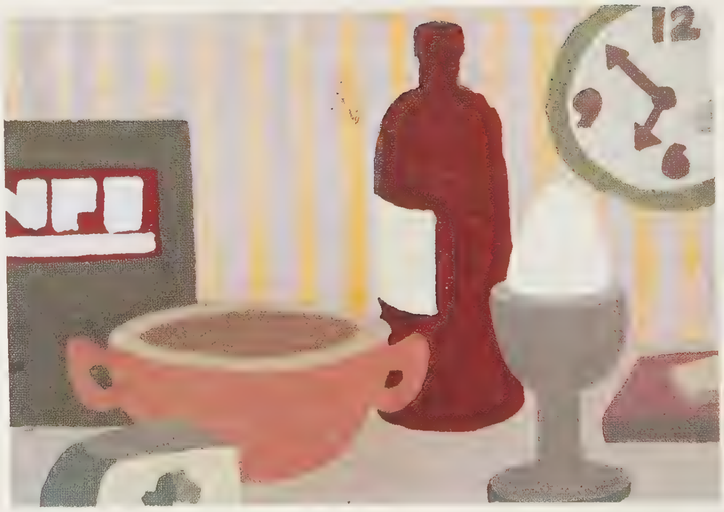

The color sketch above was selected for the enlargement on the right.

The three photographs on the right show the working area, students at work, and the teacher suggesting a correction.

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9
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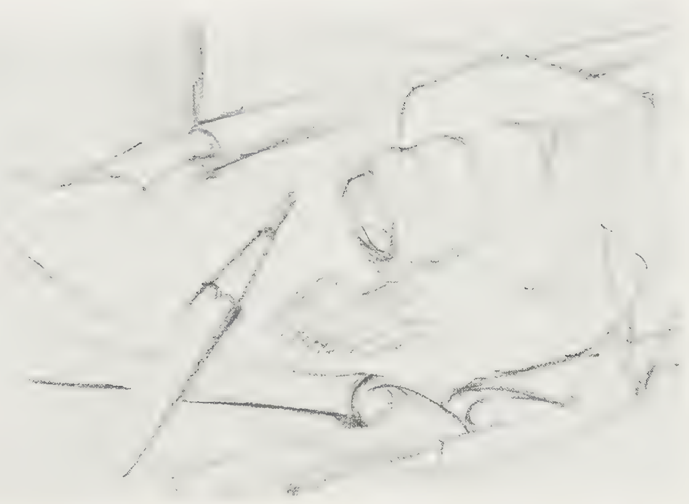
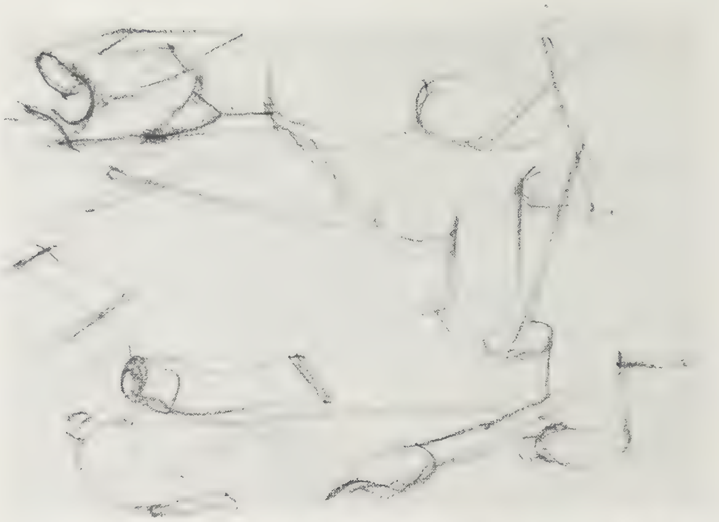
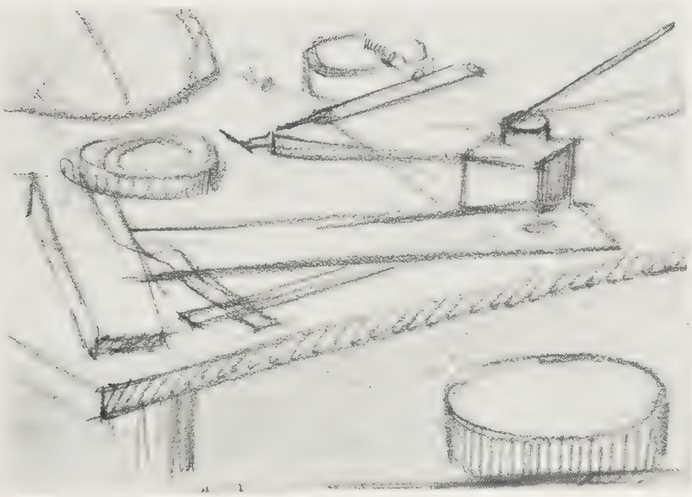
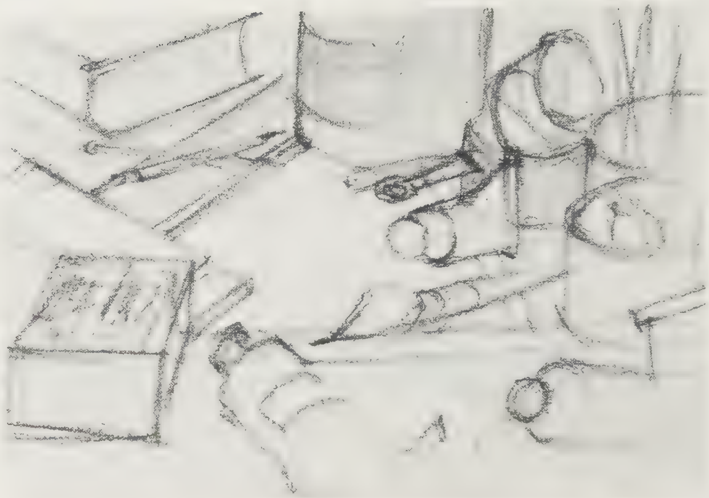
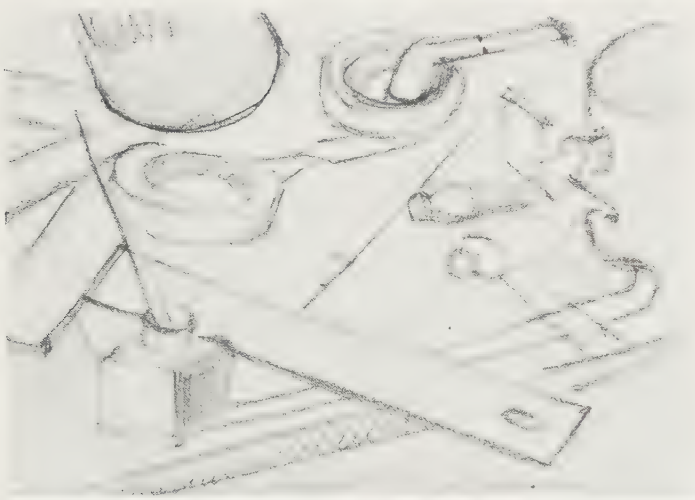
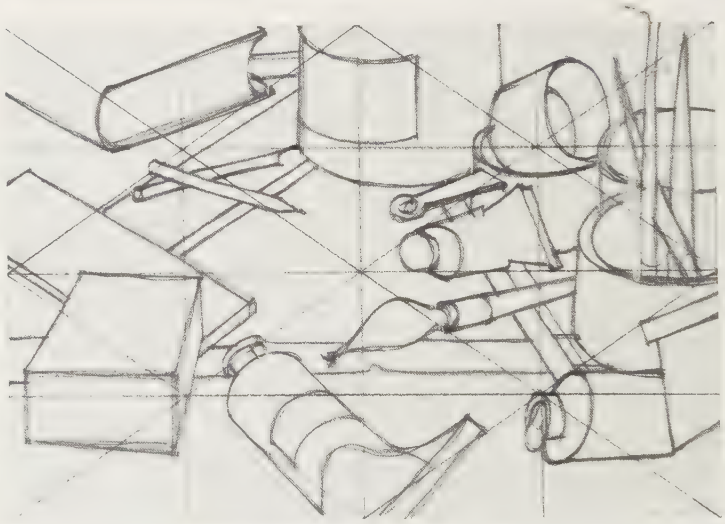




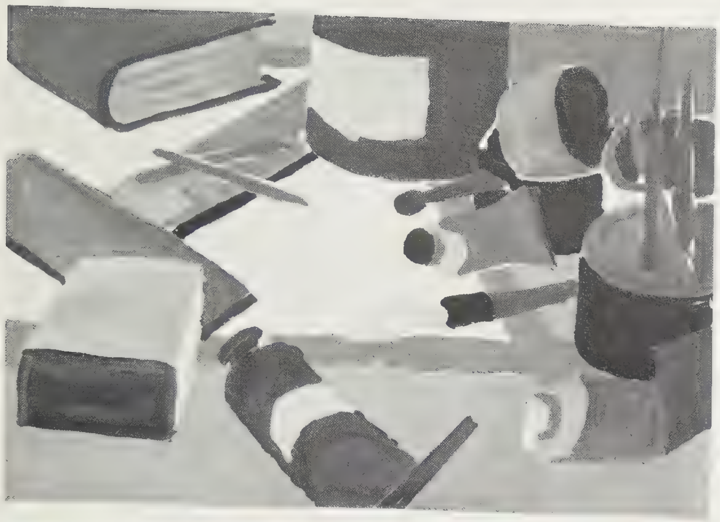


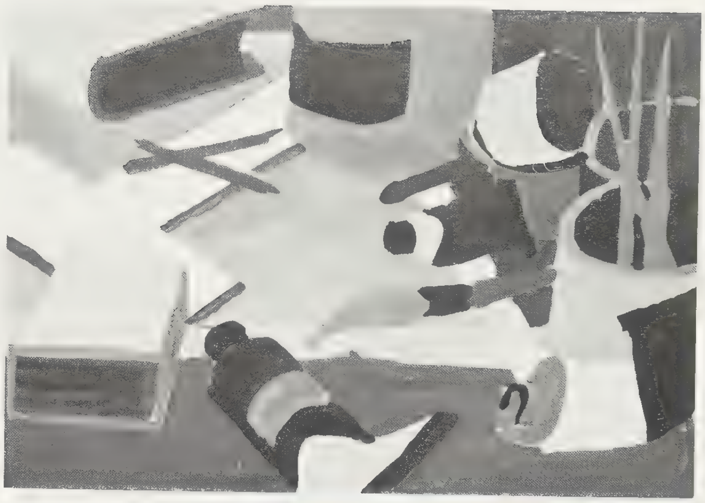


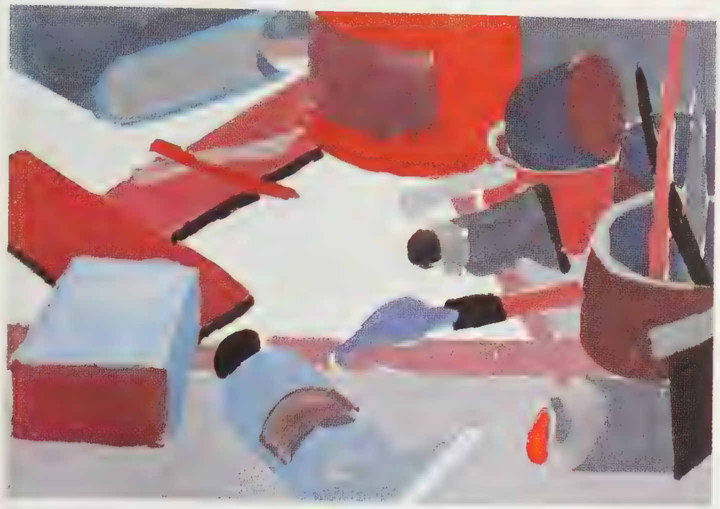


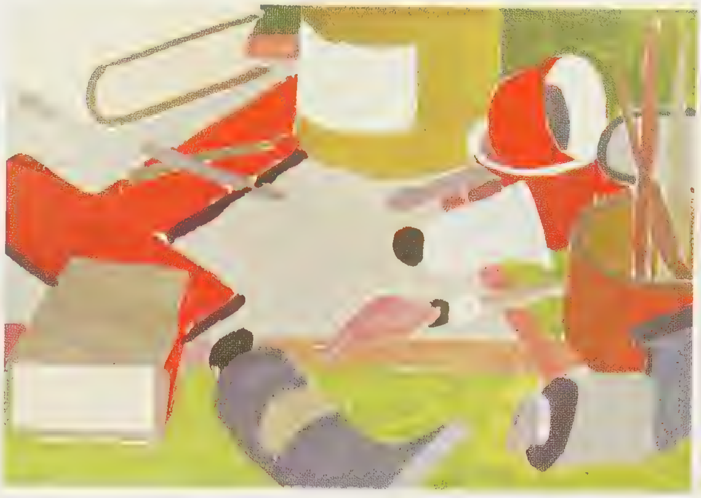


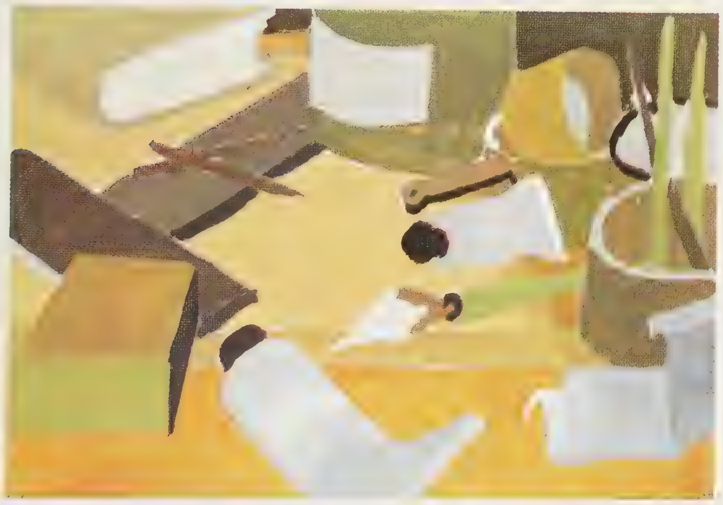
These compositional studies were done in pencil on the theme worktable. The sketch above center was selected for further investigation. In the illustration below, it is refined for enlargement and duplication.

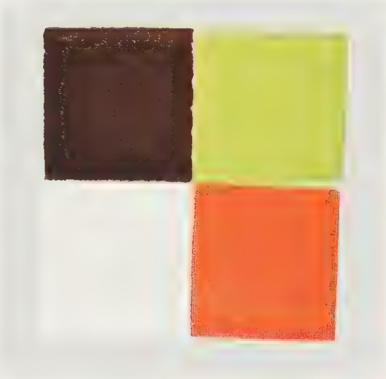






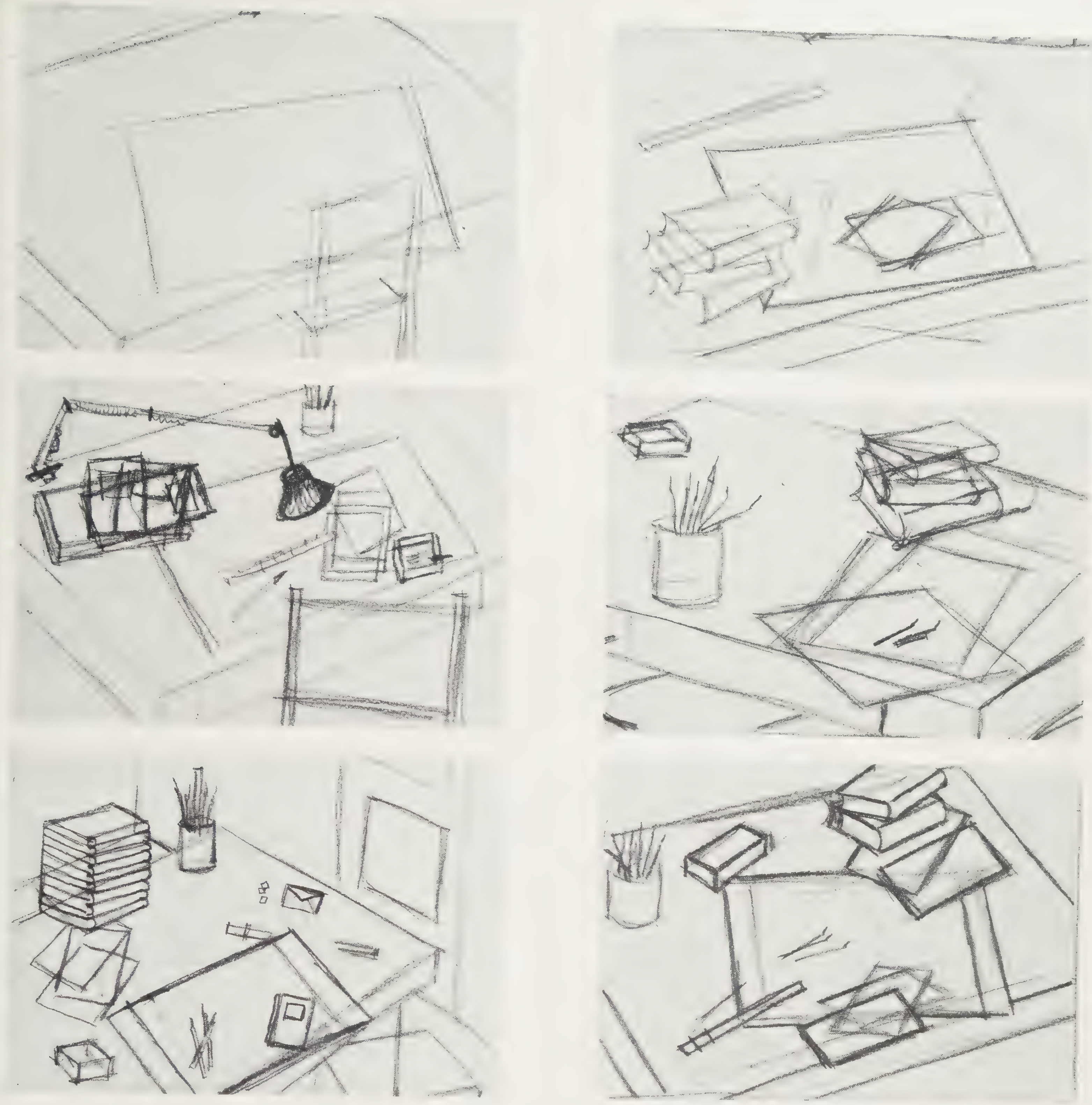




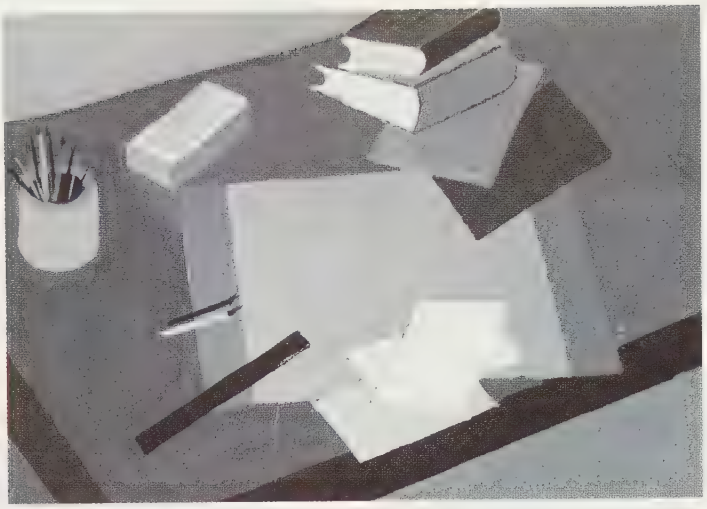


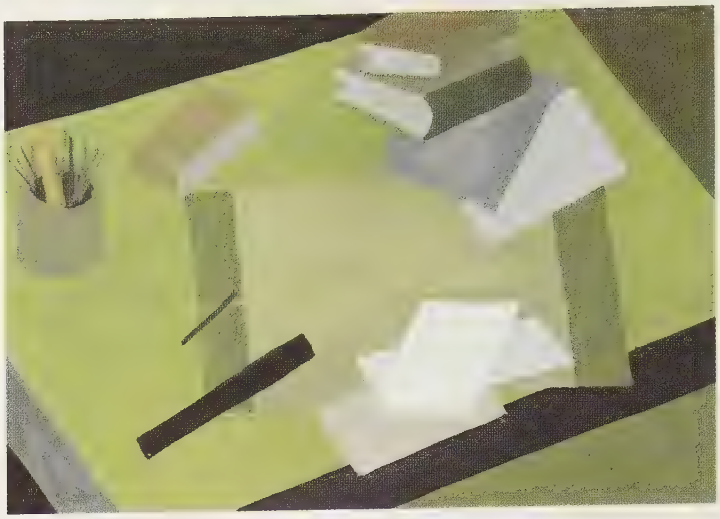
In the gray-value and color studies of the selected composition both bright colors were changed. The above unmixed-color combination was used in the enlargement. The corresponding sketch appears on the following page.

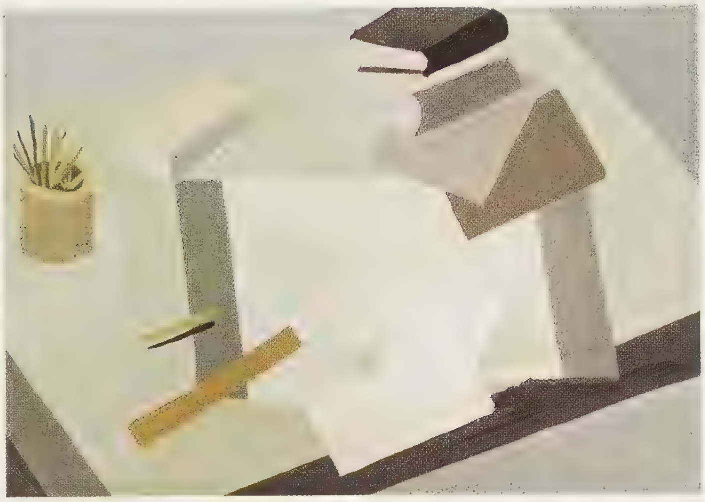
LE

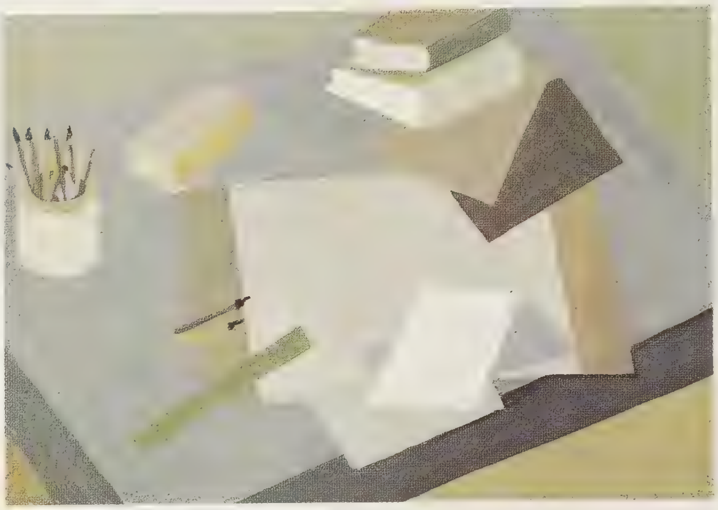


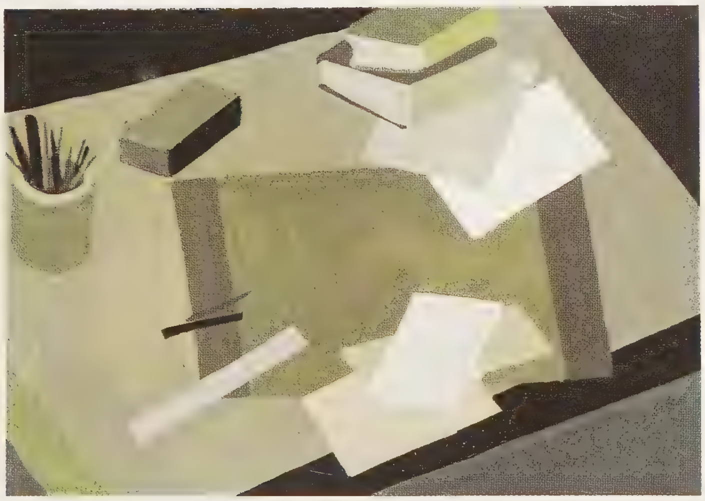
These pencil sketches on the theme worktable show how the student begins with a clear idea and tries to develop it. The composition below right was selected as the basis for the color study.

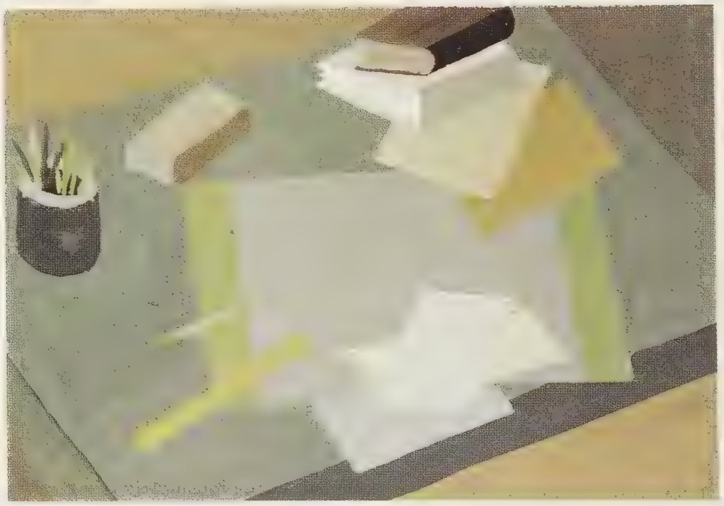


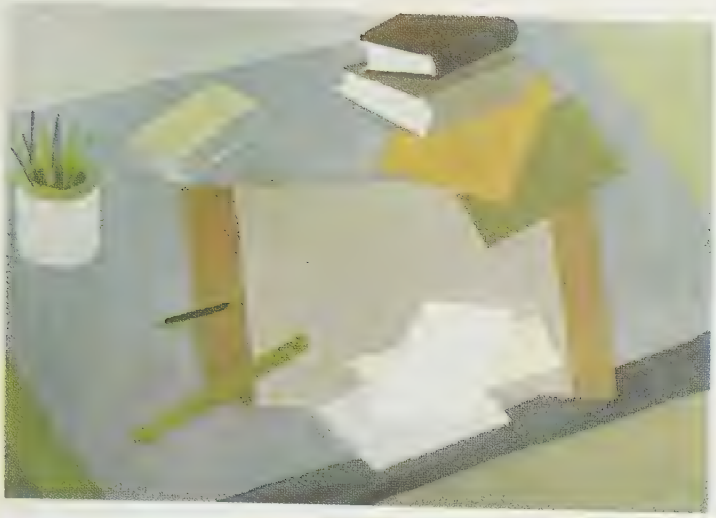


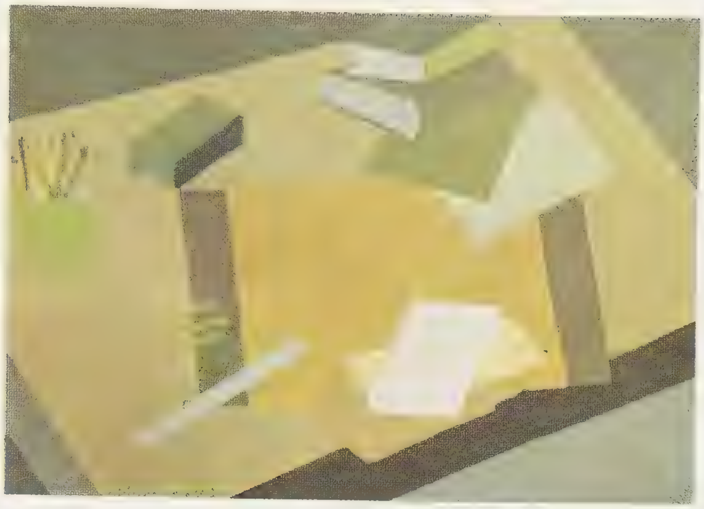


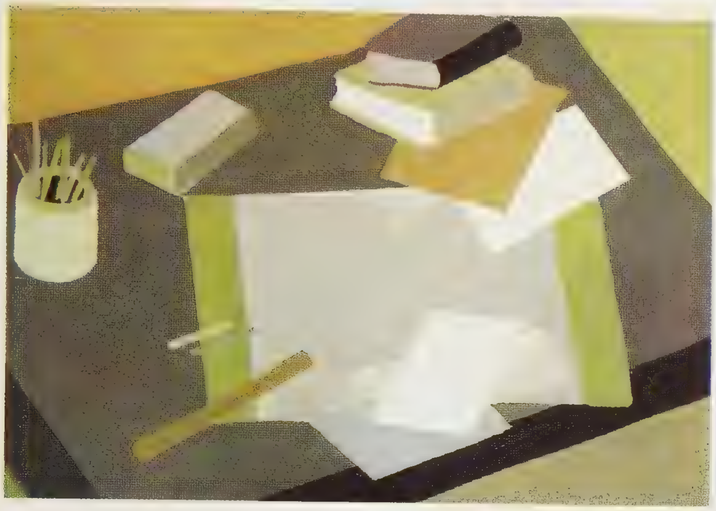


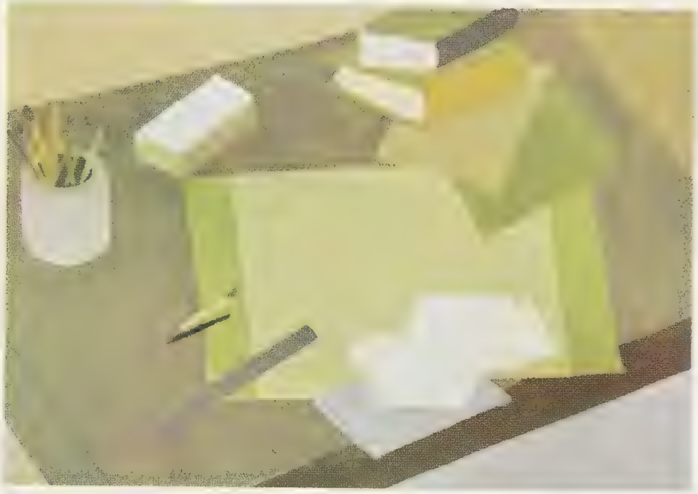


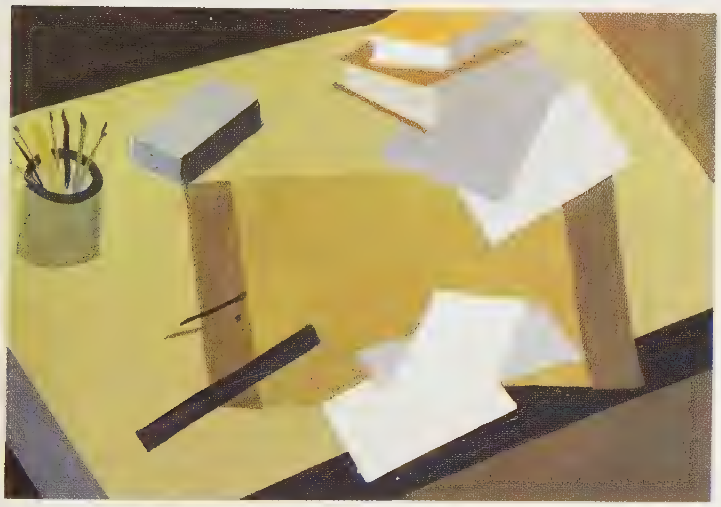




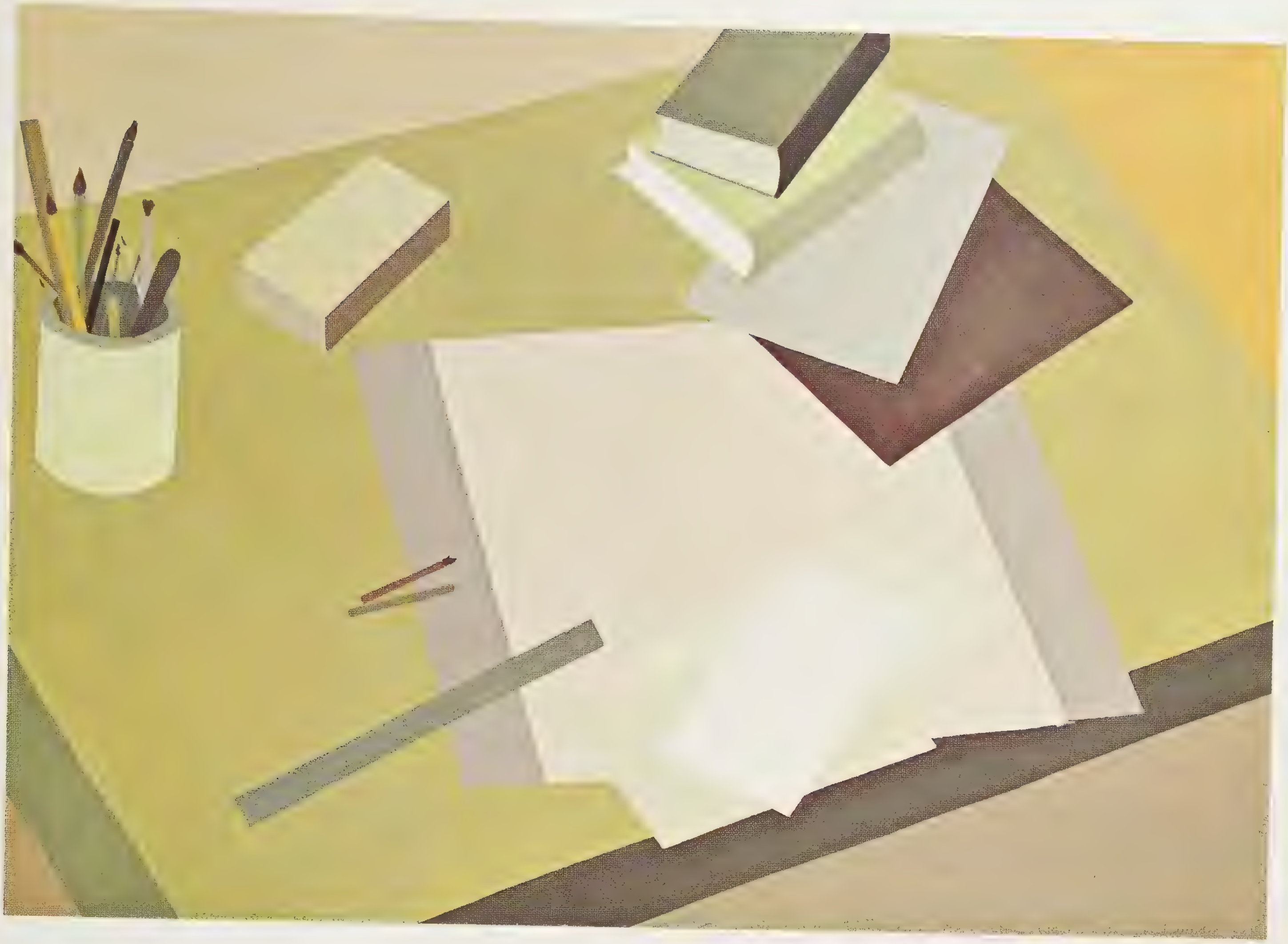






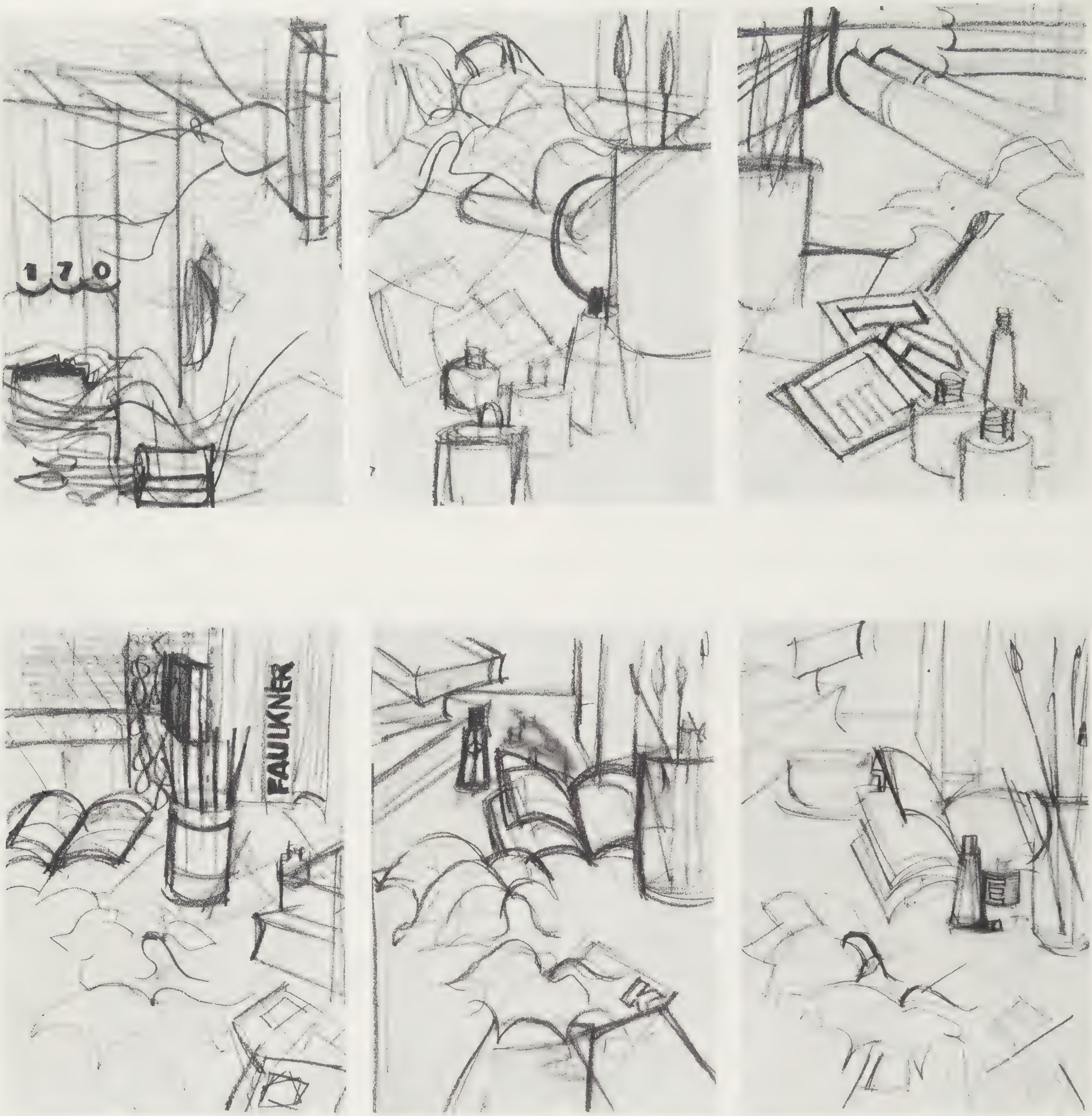


The use of white as a color in some of the color studies here and on the following pages is very interesting. Remaining light tones create a balance.

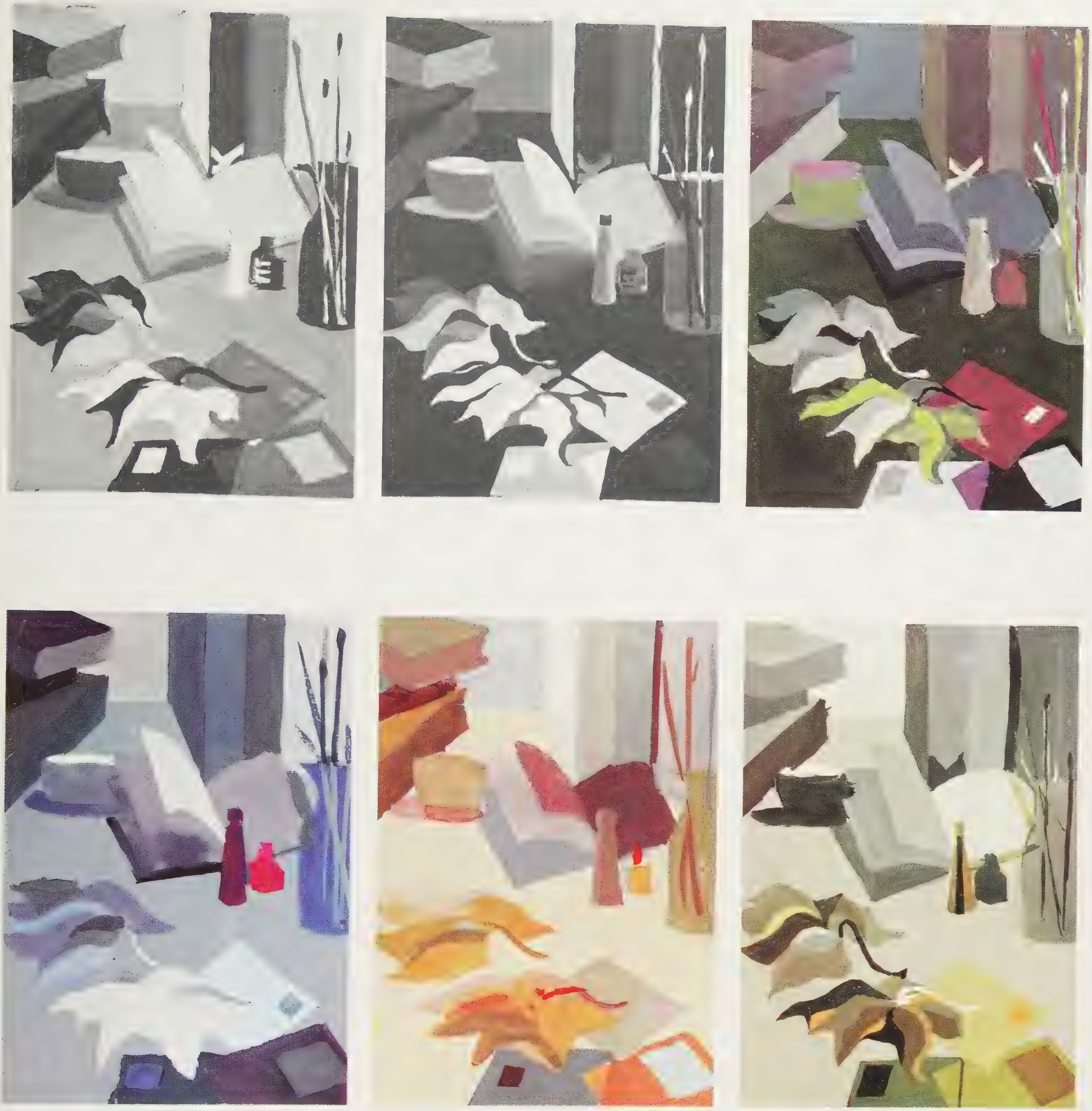


The enlargement of the adjacent color study is shown here.

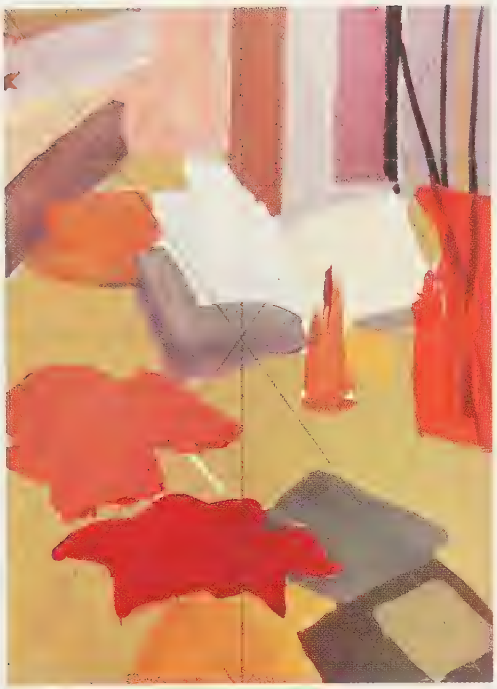
Mixtures of two bright colors, black, and white, shown below left, form the palette for the color studies and the resulting enlargement.

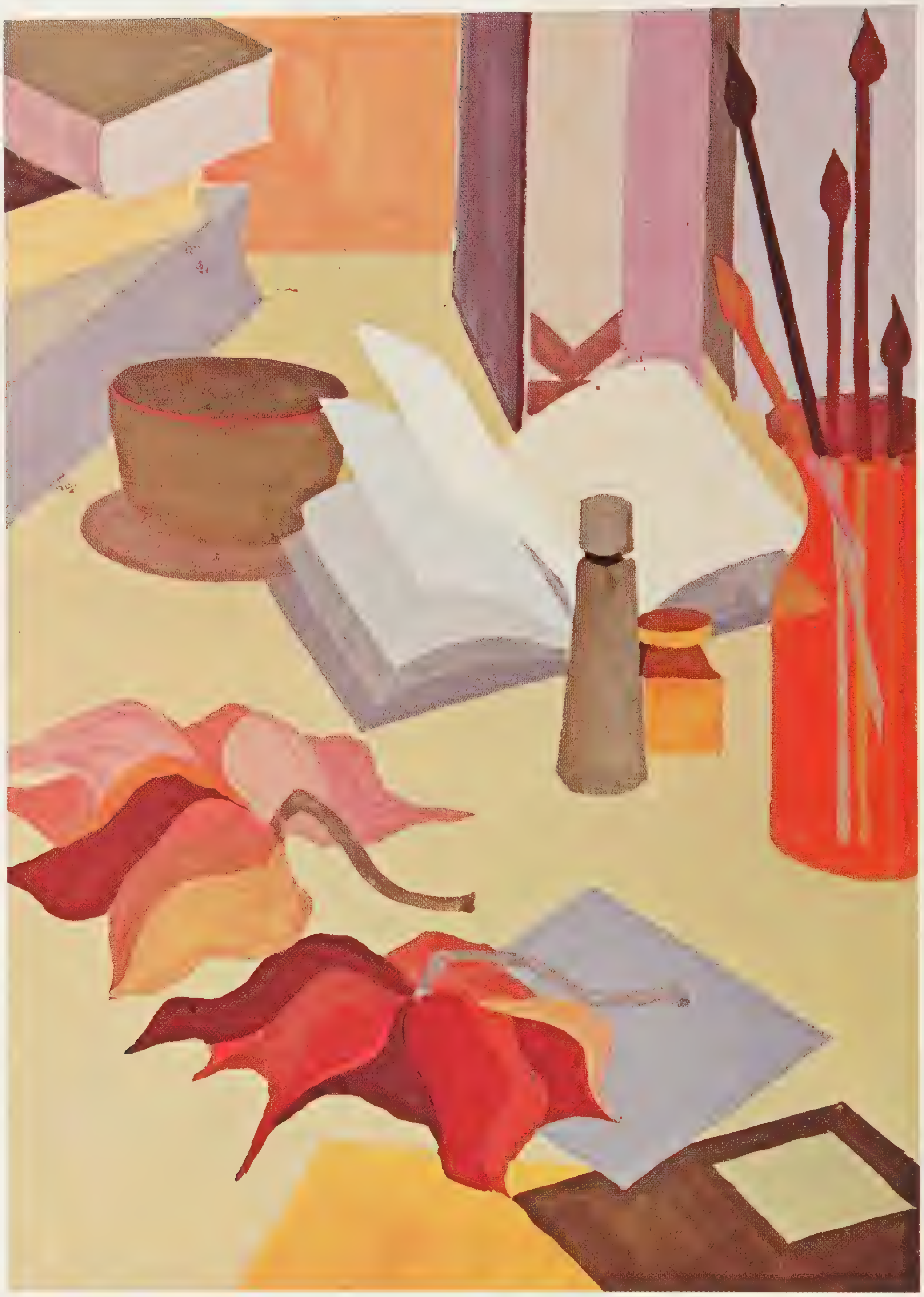


The differentiated pencil sketches on the theme worktable are rhythmically drawn and composed.

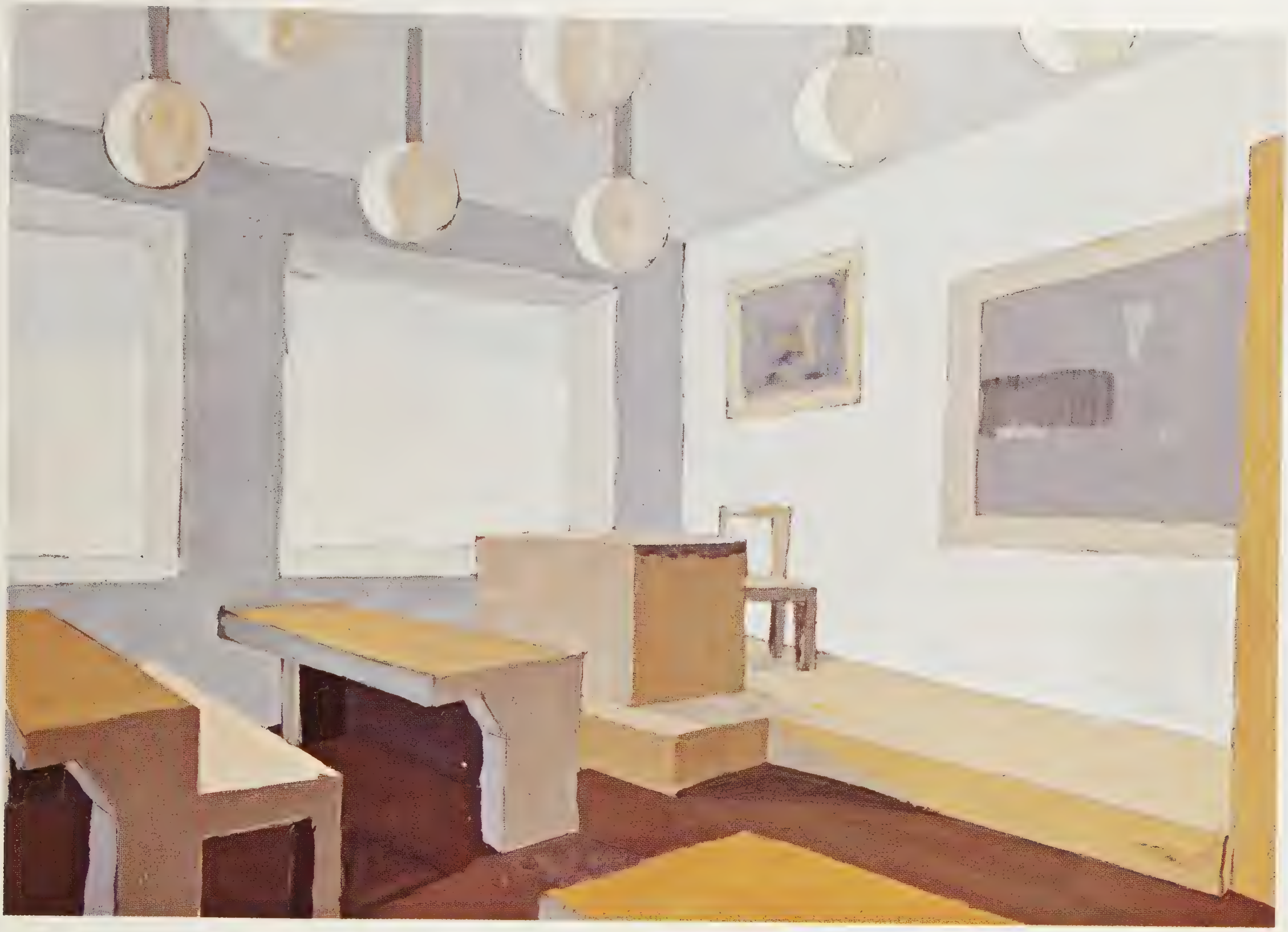


These gray-value and color studies were done from the sketches on the opposite page. A different dimensional appearance and atmosphere are created in each study by painting the table surface light or dark and by changing both bright colors.





In the enlargement from the above color sketch the details are more differentiated.



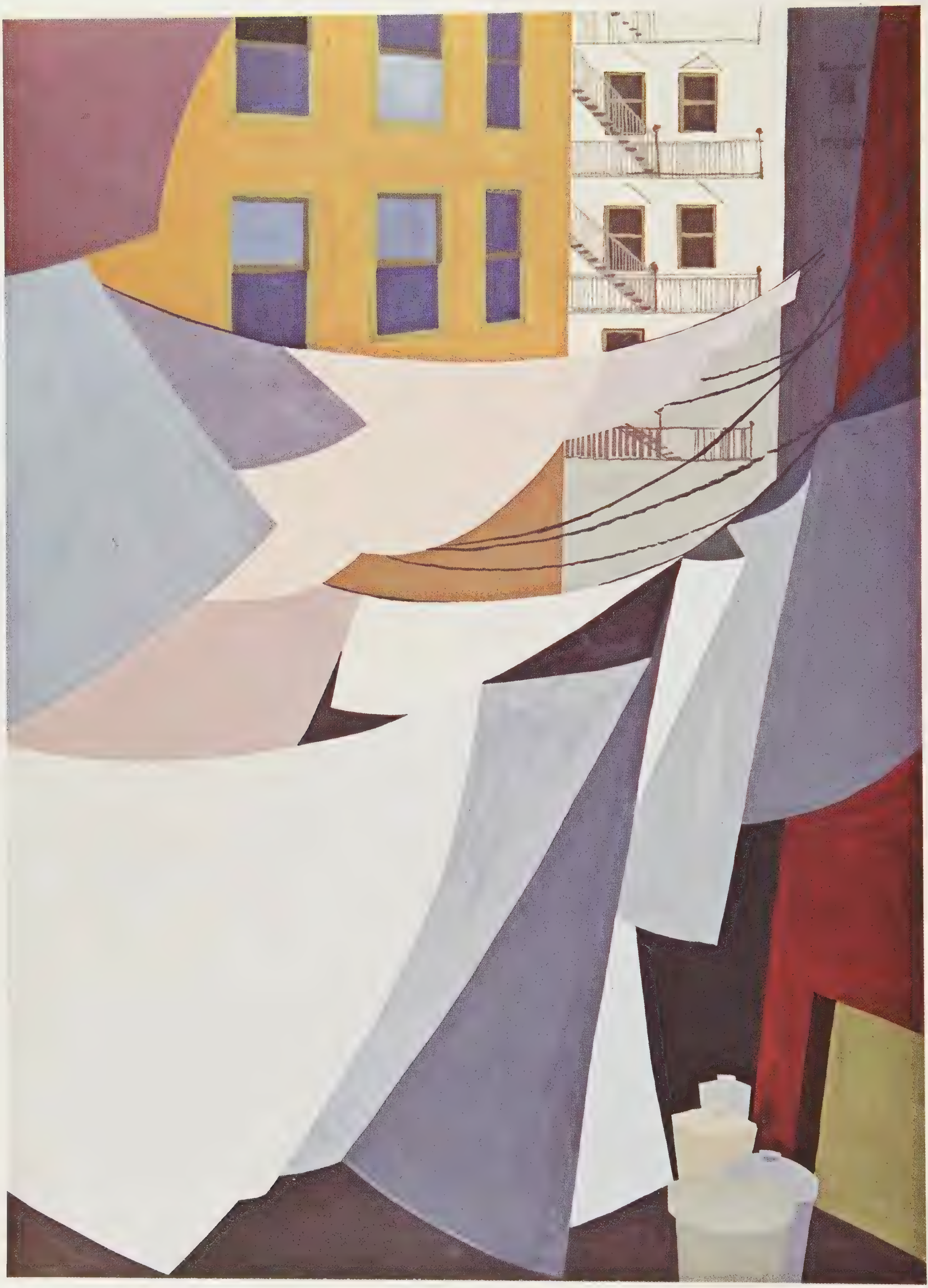
This study on the theme schoolroom, achieved in a definite, spontaneous working method, was based on sketches.

On the following pages studies by three students on the theme wash on the clothesline clarify the different creative possibilities. The translation of the theme varies with personal experience and interpretation. The use of white as a color must be arranged harmoniously in a dark environment.

The first illustration shows wash hanging in the attic. The lightest color is blended with slightly darker tones and repeated in the lower-left corner.

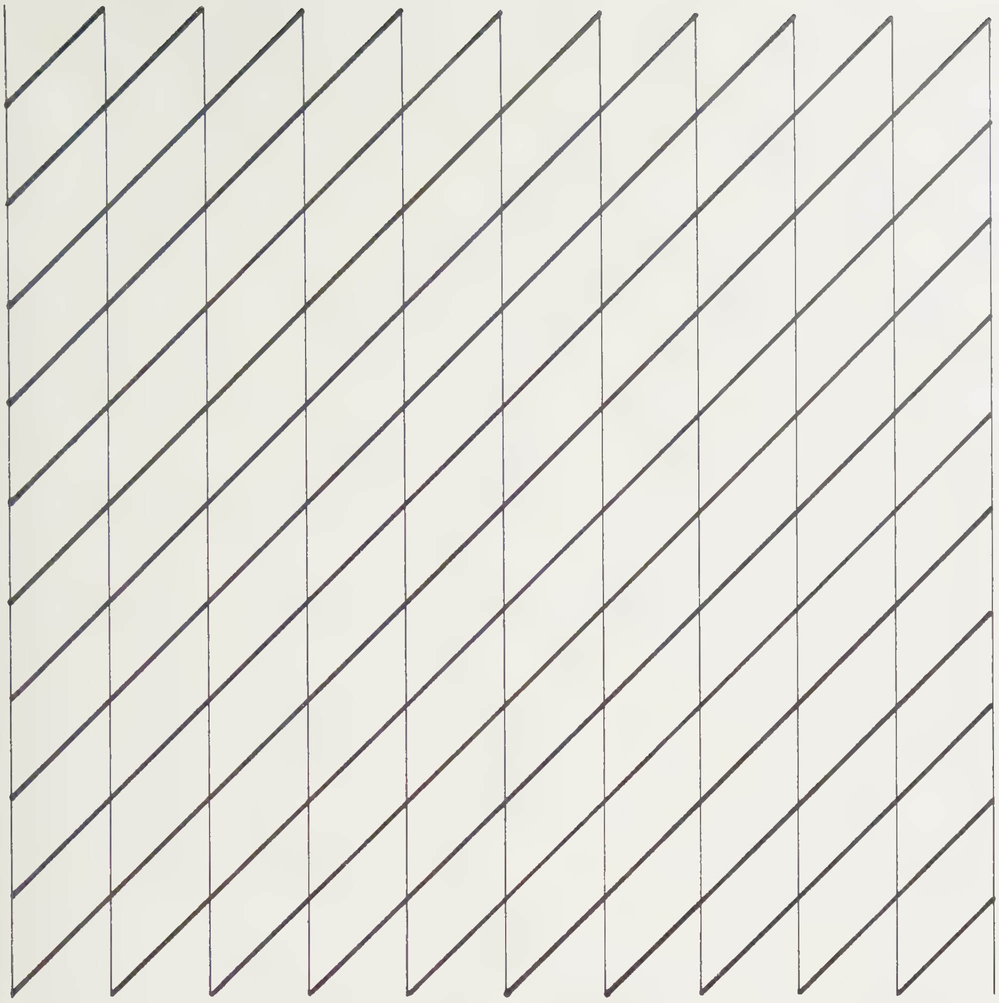
In the second illustration towels hanging in the laundry room are represented with an open door leading outside. The light enters the room from outside without producing a harsh area that would disturb the entire composition.

The third illustration shows wash hanging between two apartment houses. Abundant repetition of light areas in different gradations and sizes produces a dynamic effect through the contrast of swirling and straight forms. The lines form an additional rhythmical element.



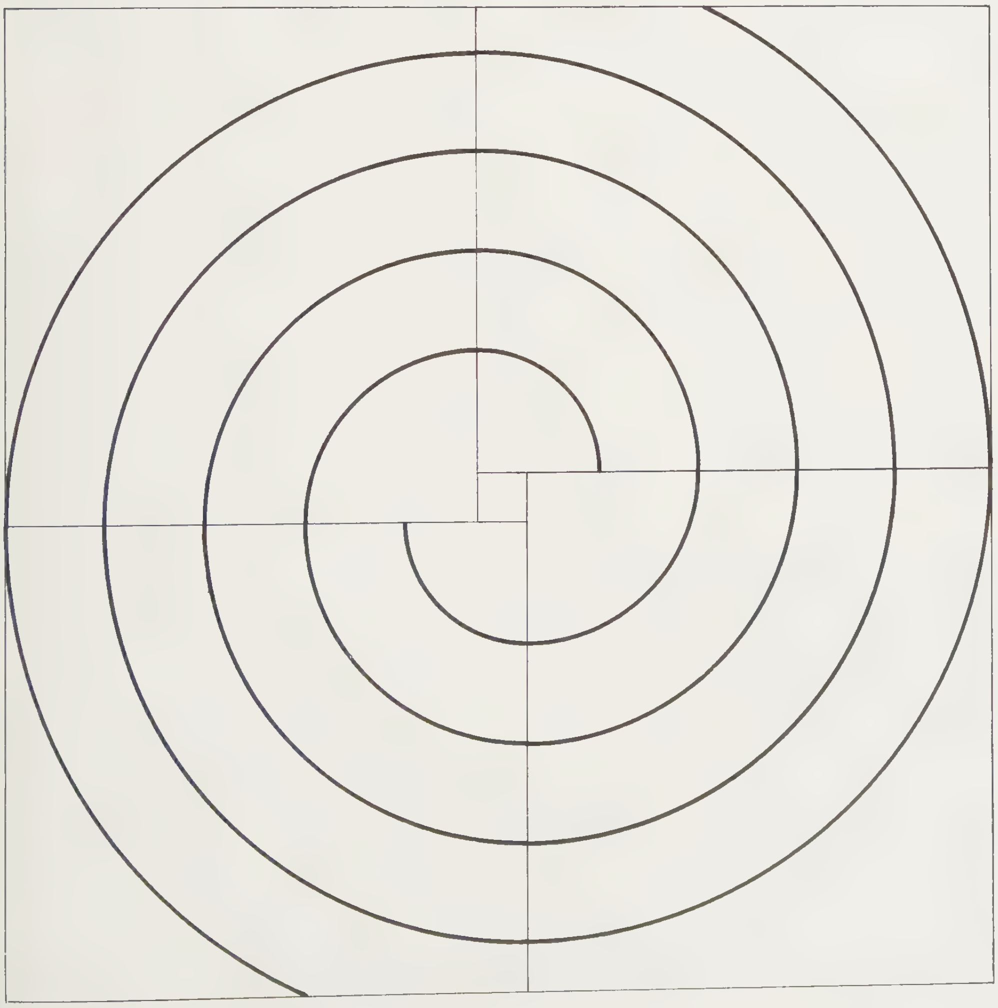
Many students have been introduced to geometry in secondary school. Plane geometry, a subdivision of the subject that includes simple, fundamental constructions as bisected angles, parallel projections, polygonal series, and the similarity ratio, forms the foundation for representational geometry. These fundamental constructions are applied in elementary exercises and supplemented with dimensional, graphic elements. The simple representation of a basic object is studied in parallel perspective. An understanding of the function of complicated constructions and the ability to draw them are developed through three-part axonometric, orthographic, and oblique projections. Students learn perspective and its principles through central projection in conjunction with photography. Extreme dimensional situations are consciously constructed and distorted beyond the normal field of vision; the difference is obvious between the perceived foreshortening in freehand drawing and the constructed perspective from a fixed viewpoint.

Drawing involving mathematical disciplines demands a neat representation, precision, and the concentration of the student. These skills are achieved through constant exercises with the appropriate tools and materials, especially ruling pen and compass. In professional practice they can be extended to production or architectural drawing, a technical specialty with recognized standards.



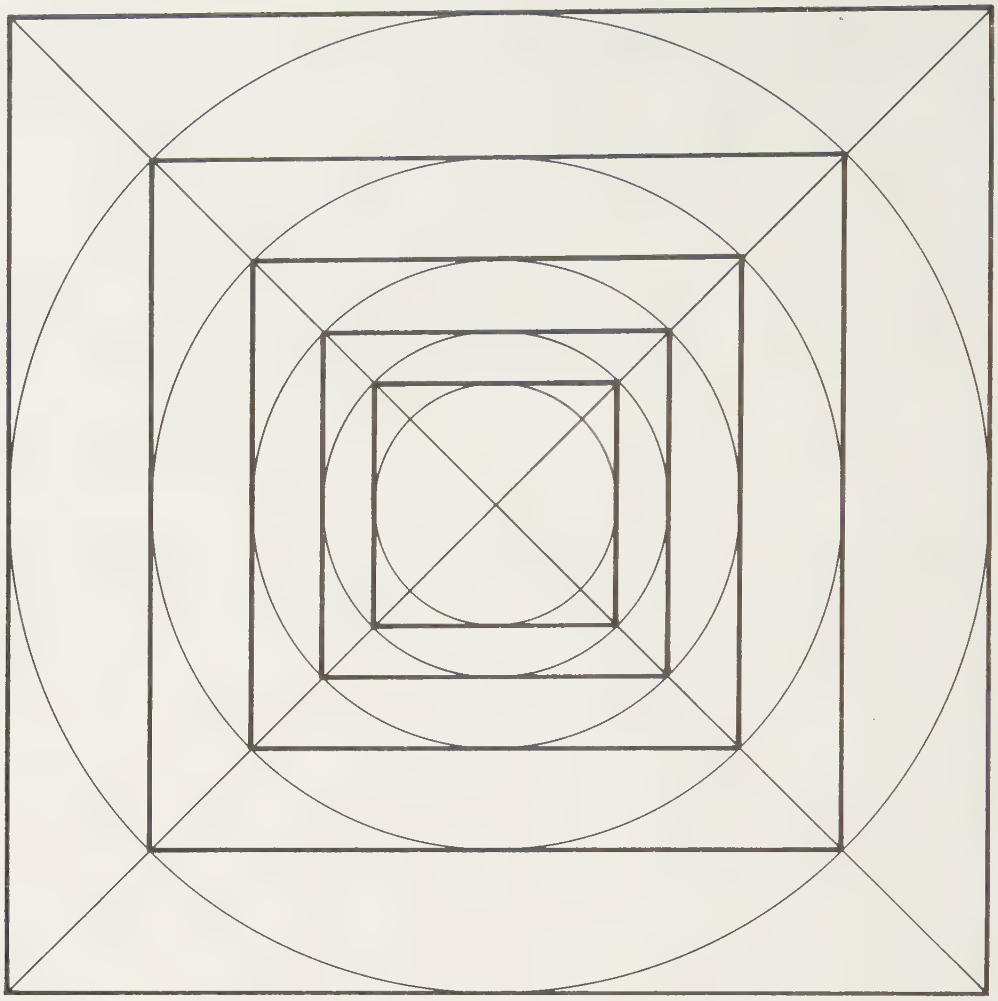
In the beginning of this course, simple preparatory exercises explain correct handling of the materials and tools. The students learn to use T-square, triangle, pencil, ruling pen, compass, ink, paper, and drawing board. At the beginning they use pen-and-ink over pencil sketches: later inking pens such as Rapidographs can be used.

On the left a preliminary study is shown.

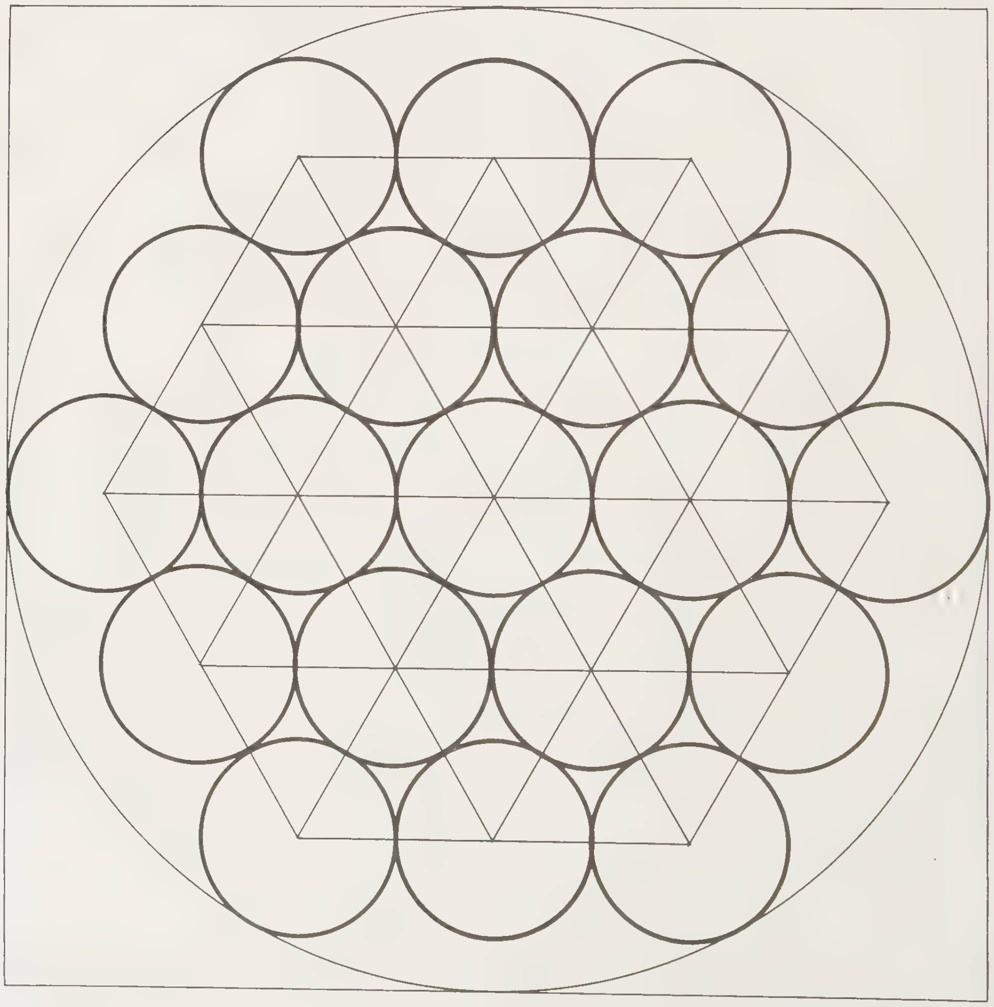


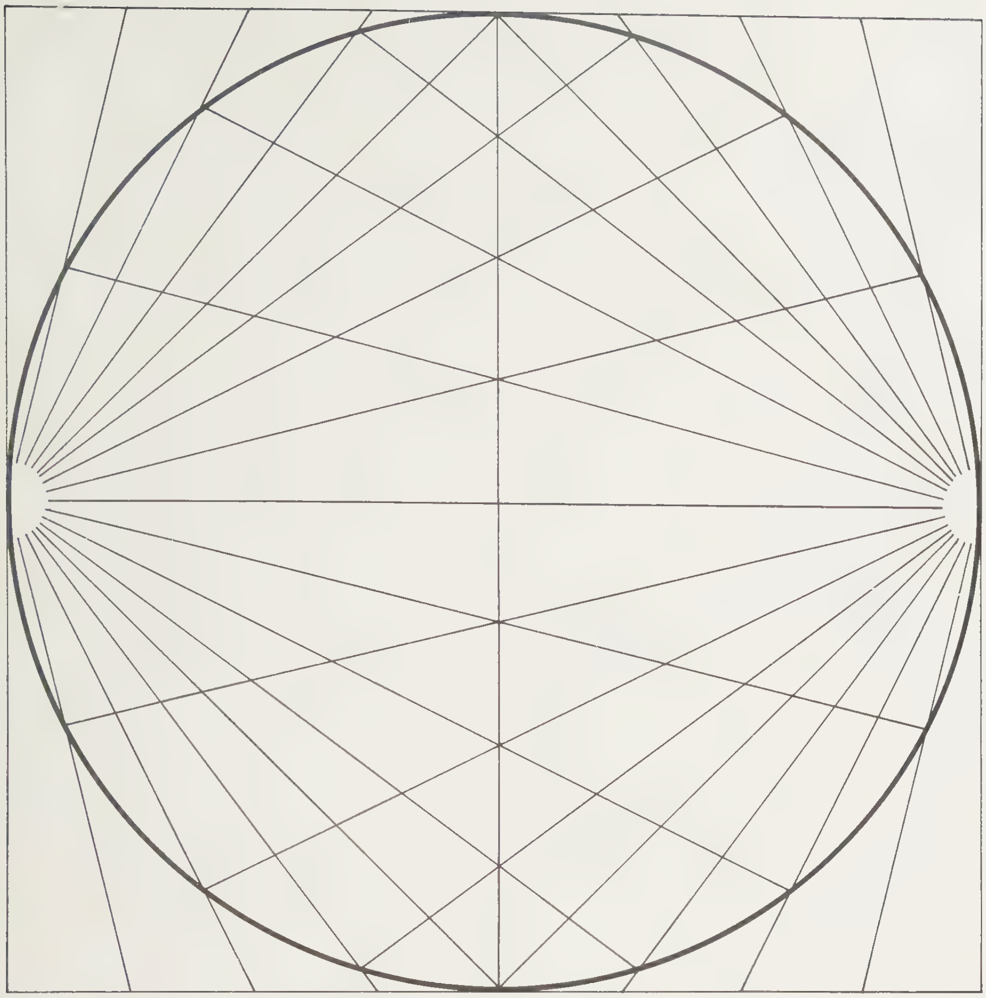
The Archimedes spiral can be approximated by constructing arches with their centers at the corners of polygons. With very small radii, the interior edge of the curve is deformed and needs more than four radial points. These curves are drawn directly in ink without preliminary pencil sketches to avoid difficulties in tracing the curves precisely.

Uses of the small, drop, and extension compasses are explained by the teacher, and the students experiment with them on sketch paper. Compass exercises include the construction of central-axis circles, with the constant reduction or enlargement of the radii and the formation of additional squares through divisions of the tangent points and diagonals, shown here. Mistakes are corrected with an etching knife or razor blade and not with opaque paint.

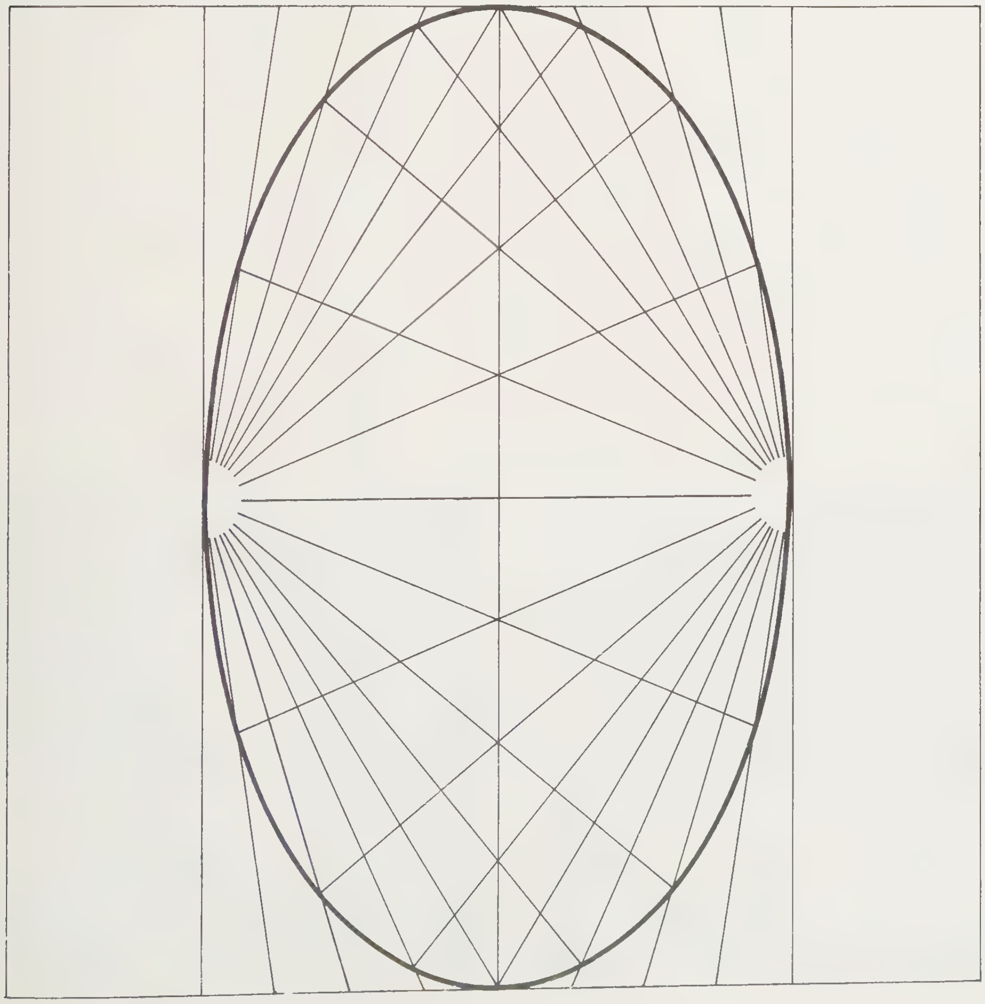


The irregularity of the tangent circles on the base grid is more striking here than in the above example. Despite extremely exact sketching, mistakes can occur from a slight shift of the compass point, the condition of the drawing board (hard- or soft-grain), or irregular ink flow, which dries at a different rate in areas in which the circles overlap.





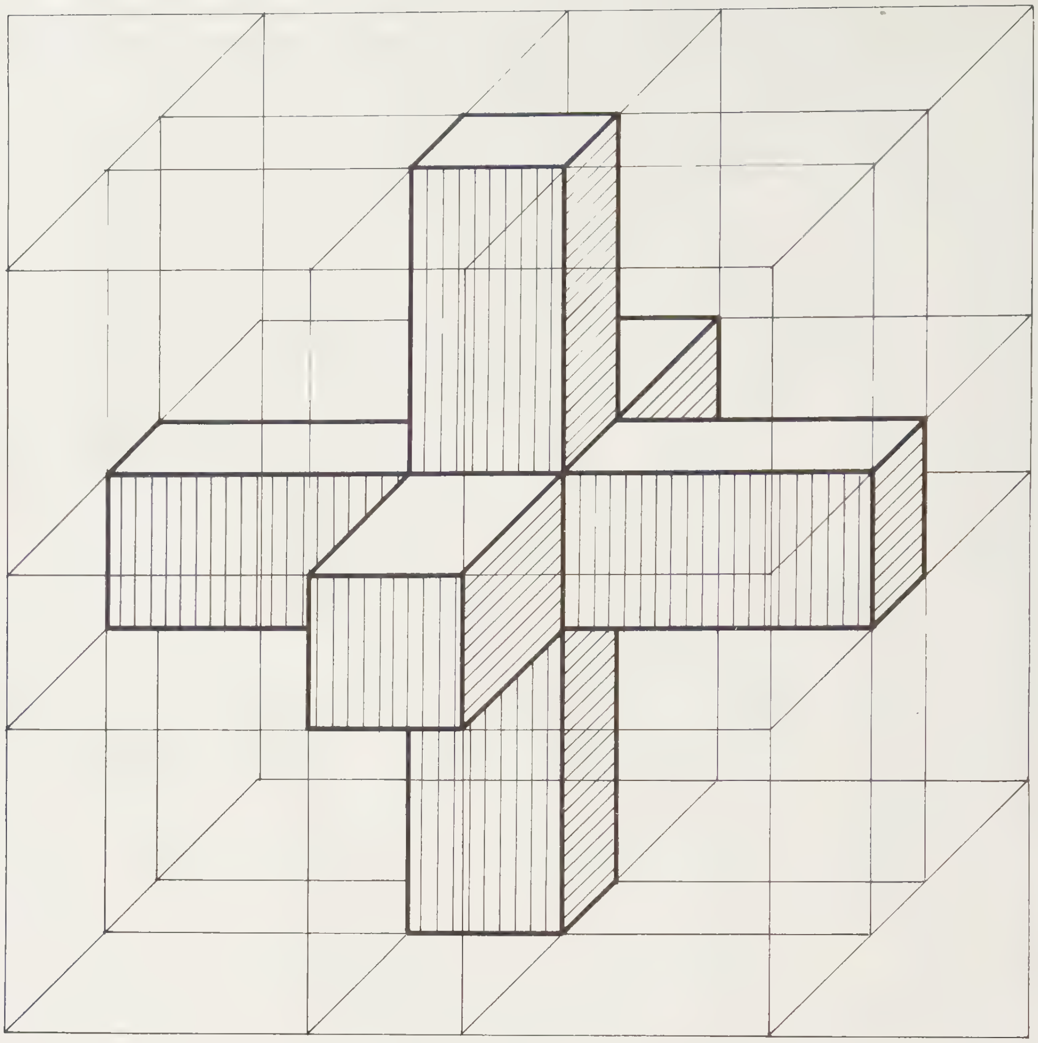
In the circle the secant and chord lines, at right angles to one another in relation to the square, are drawn regularly and symmetrically, with Thales' theorem offered as an explanation. As a variation of this exercise, a circle can be simulated by extending the fine subdivisions of the construction. If many lines converge at one point, irregular ink flow can be avoided by inserting a blank circular form.



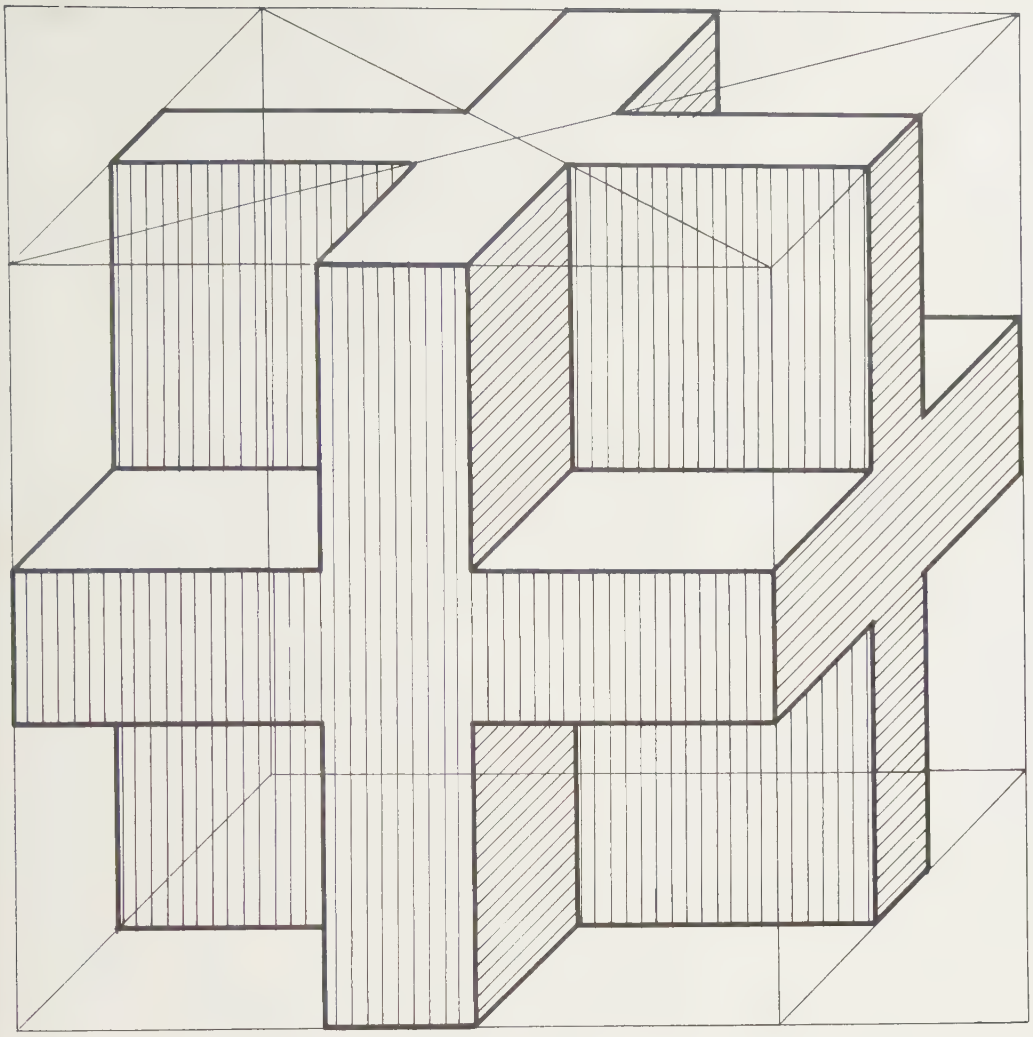
An ellipse is produced in the above construction by making proportional subdivisions of the rectangle and the symmetrical axes. Various elliptical constructions are explained. Experiments with French curves are done directly in ink on sketch paper because they require a great deal of practice.

In the isometric (one-dimensional) and diametric (two-dimensional) methods of parallel projection the representation is constructed by combining foreshortened ground and side views with the unforeshortened vertical view. This systematic method of finding spatial points is useful for the more complicated central projection.

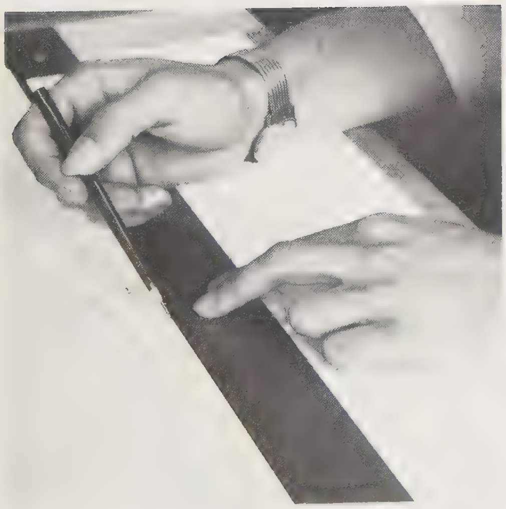
On the right is a drawing of an axial cross in a cube. The exactness of the square touching the sides of the cube can be tested by inserting diagonals.

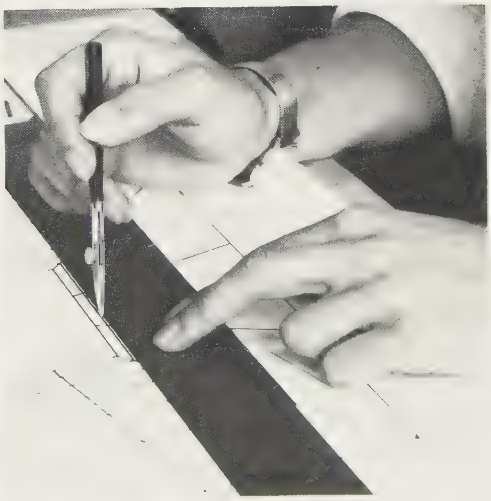


The teacher and the students are at work in the classroom.
The three photographs on the right show the correct handling of the pencil and the ruling pen.

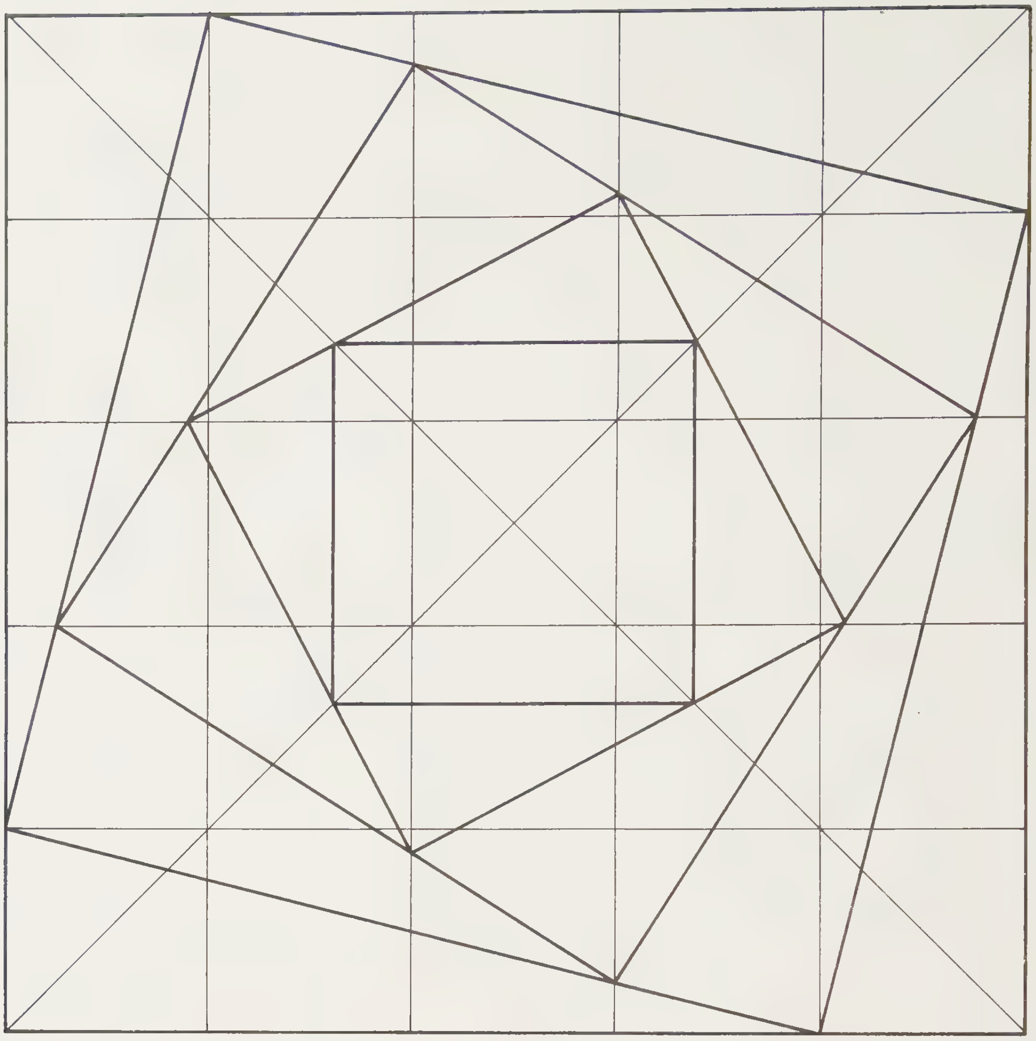


This dimensional cross is extended to the walls dividing the cube. The proportion of the frontal to the foreshortened side of the cube in the standard diametric method is 1:0.5. The linear grid emphasizes the overlapping surfaces. Time-consuming, difficult shadow constructions are avoided at this stage.

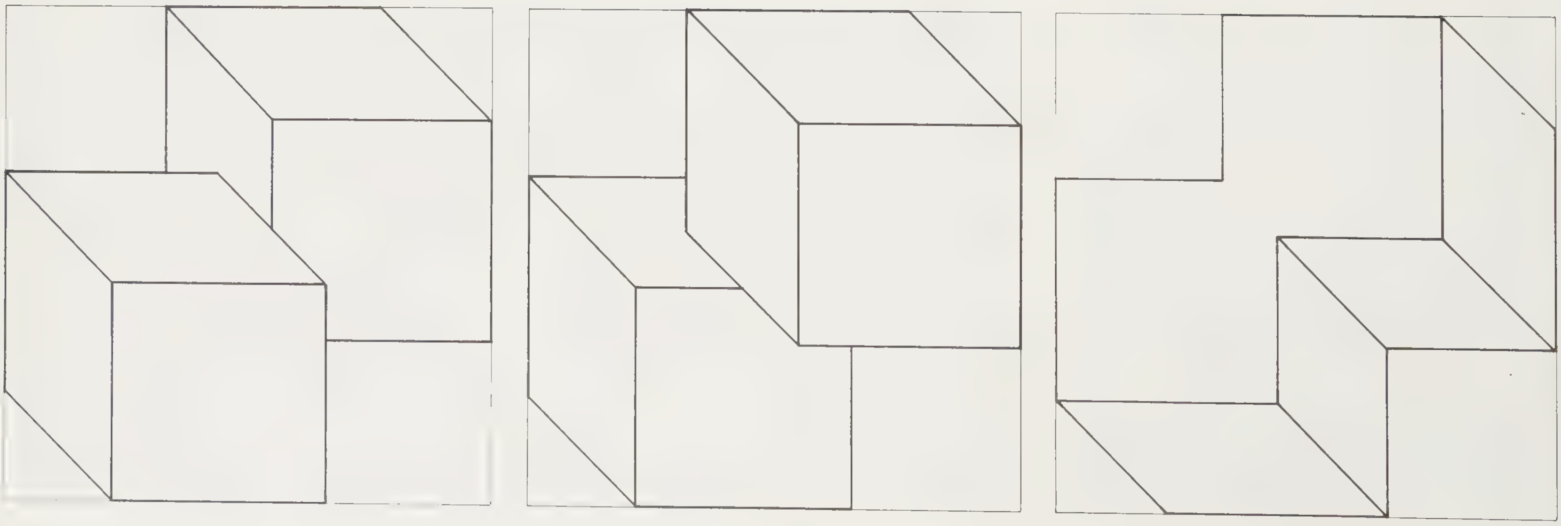


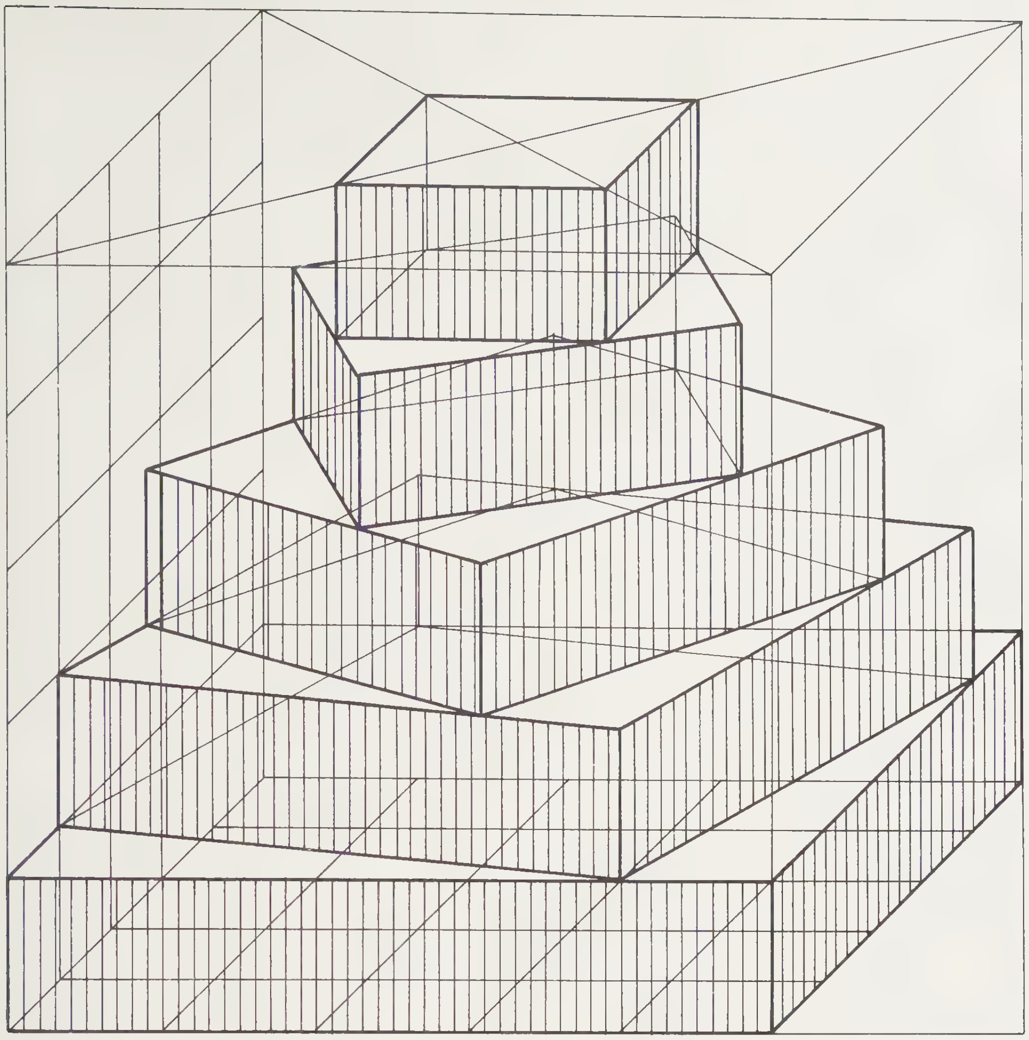


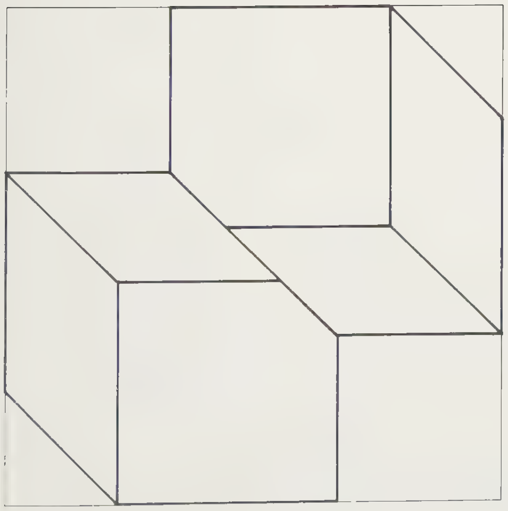
Gradated revolving prisms are sketched in relation to the base grid or to the diagonals of the square, and the ground plan is drawn precisely. In the illustration on the right the grid is drawn at the sides of the cube, enclosing the steps from which the corresponding spatial points are produced with three-part projection. The vertical, linear grid can be drawn in different densities to correspond to the angle of each level.

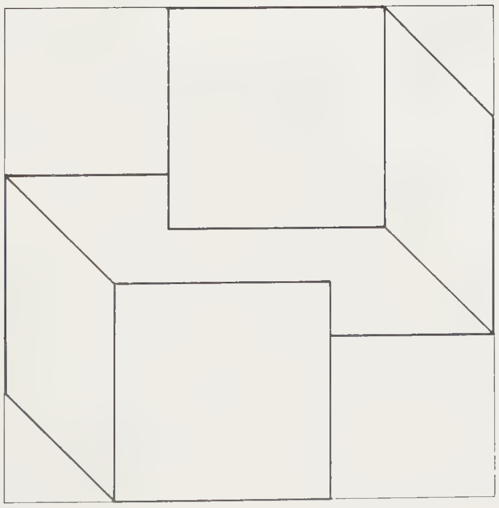


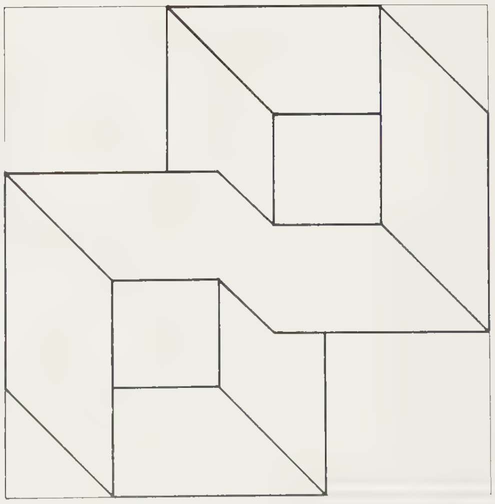
Six variations of two intersecting or penetrating cubes can be drawn with the same exterior contour and varying interior lines, producing optical illusions: the dimensions of the views from above and below are indefinite. Such figures can always be realized dimensionally and are incorrectly labeled as impossible figures.





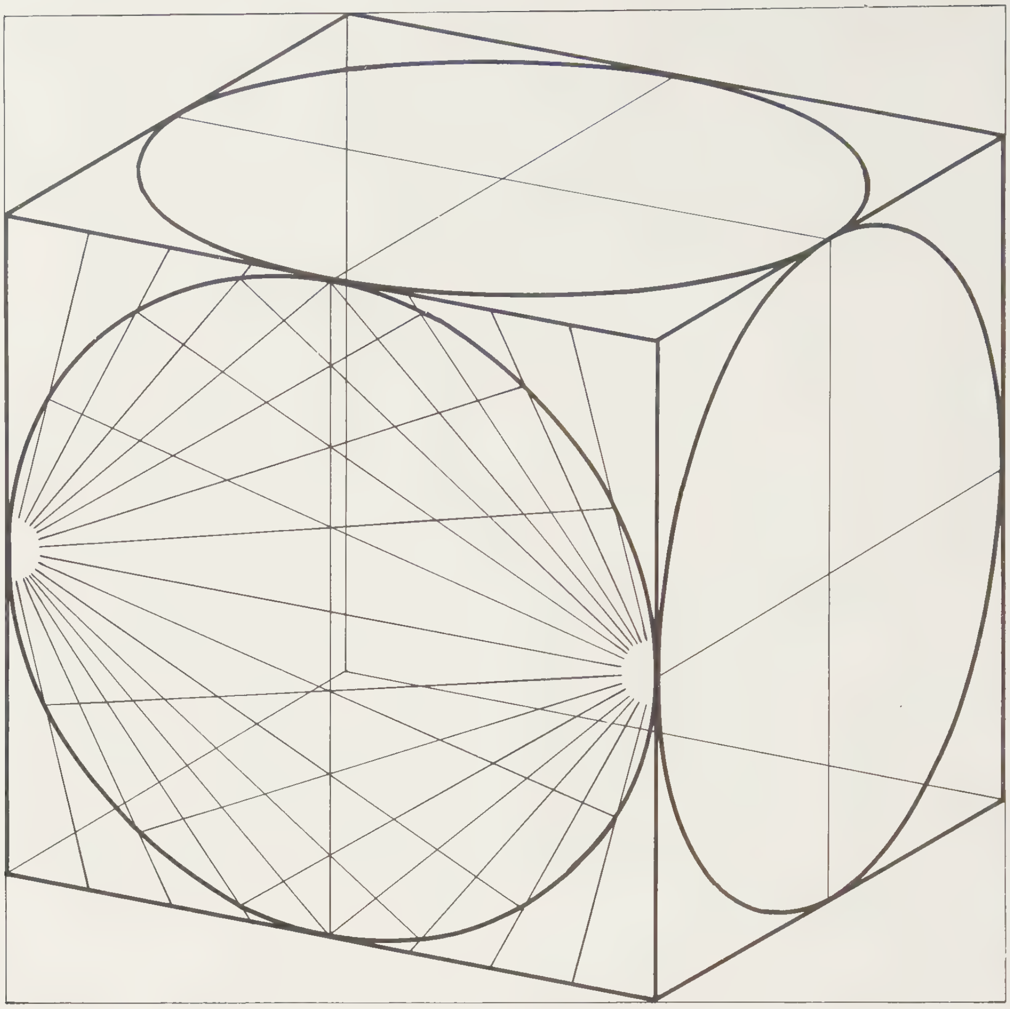




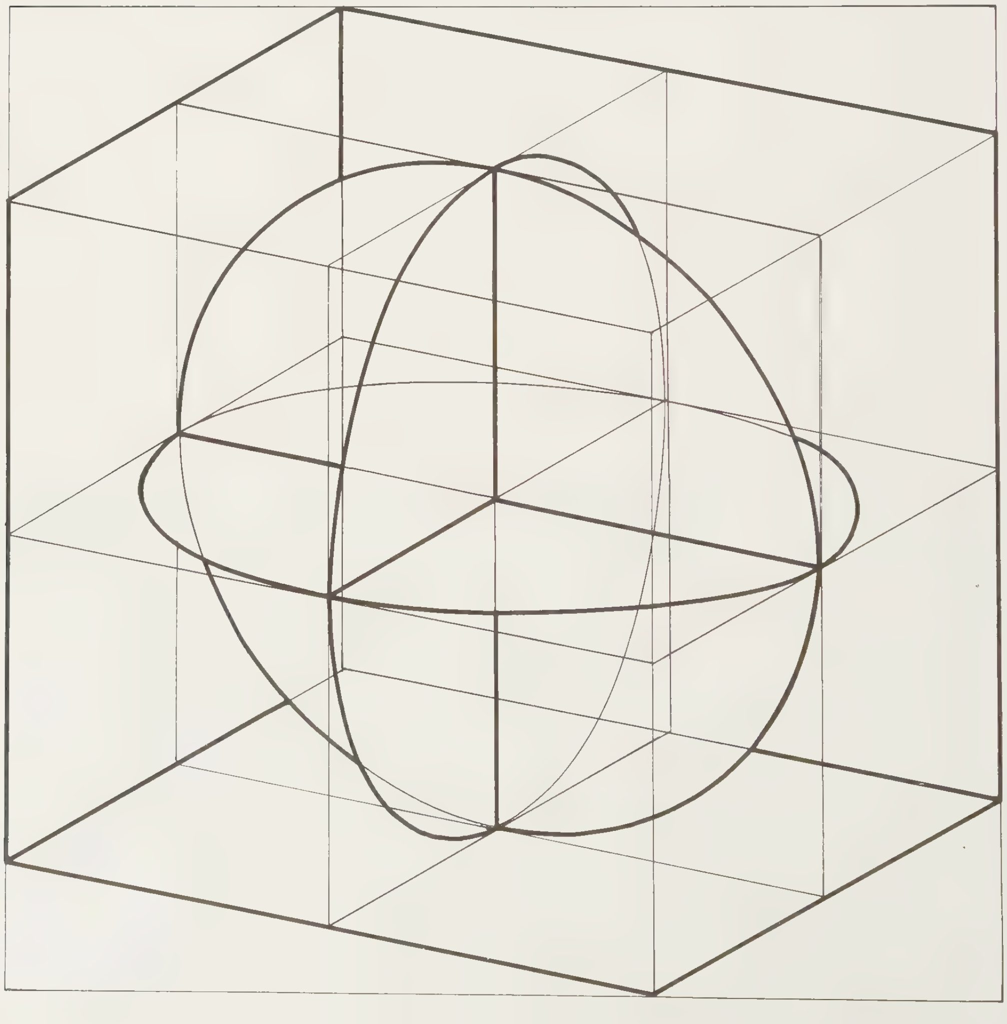


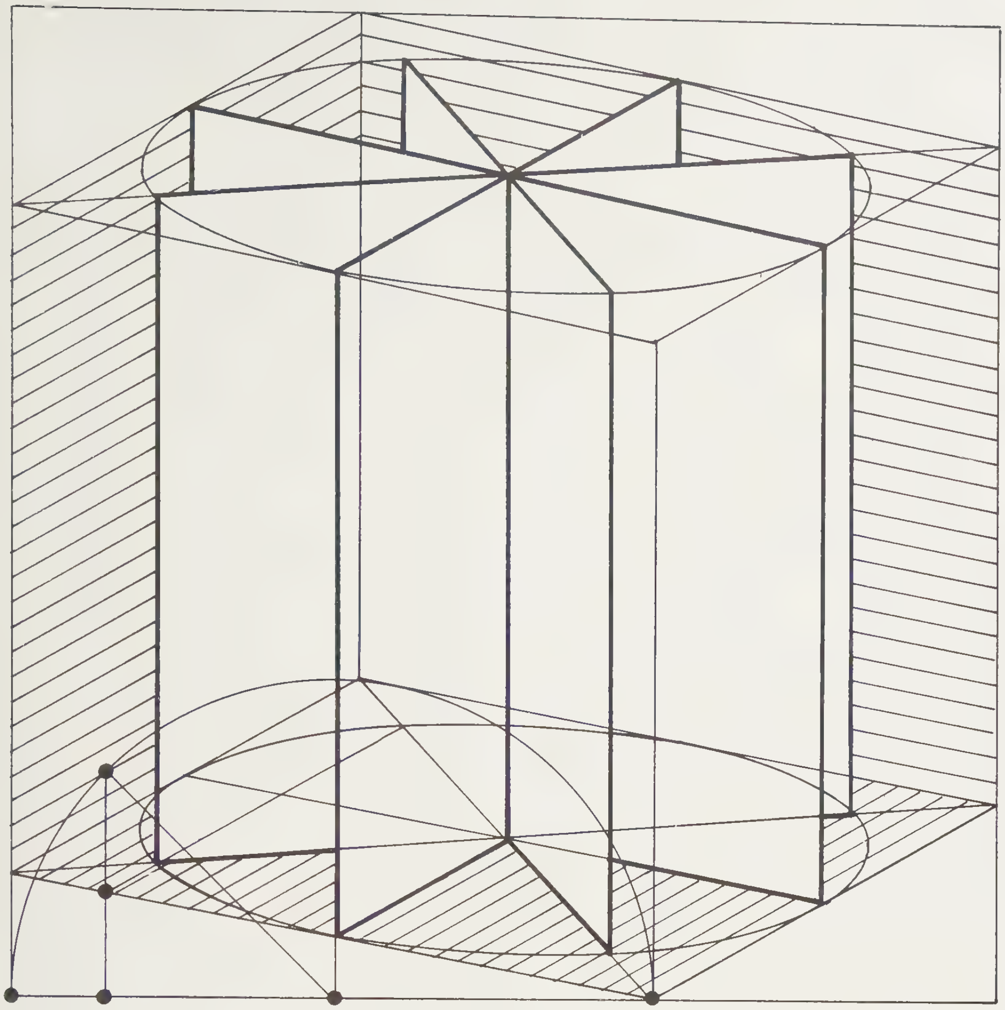
In comparison to central projection, parallel projection always appears to be slightly distorted. The clarity of the direct measurements in the drawing compensates for the disadvantageous presentation.

Simple proportion numbers replace the usual edge angles, 7° and 42° respectively, on the circumscribed square for the elevation of the cube sides. In a variation of the previously mentioned Thales circle construction the ellipses are inserted on the three visible sides of the cube.

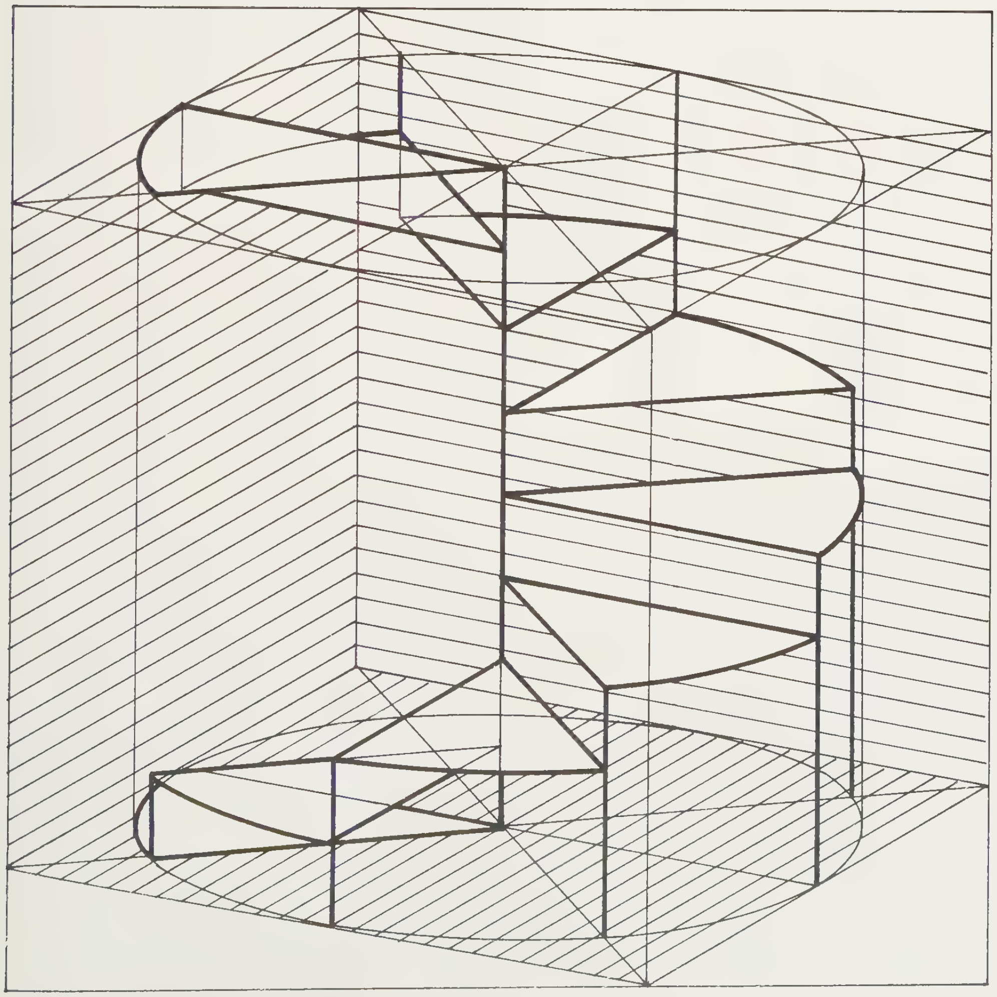


The ellipse and cube axe in the above illustration become identical by shifting the visible outer ellipse parallel to the center of the cube. A tangential curve, cut by the three ellipses at their contours, would give the parallel projection of a sphere, an ellipsoid of rotation whose center coincides with the gravitational center of the cube.



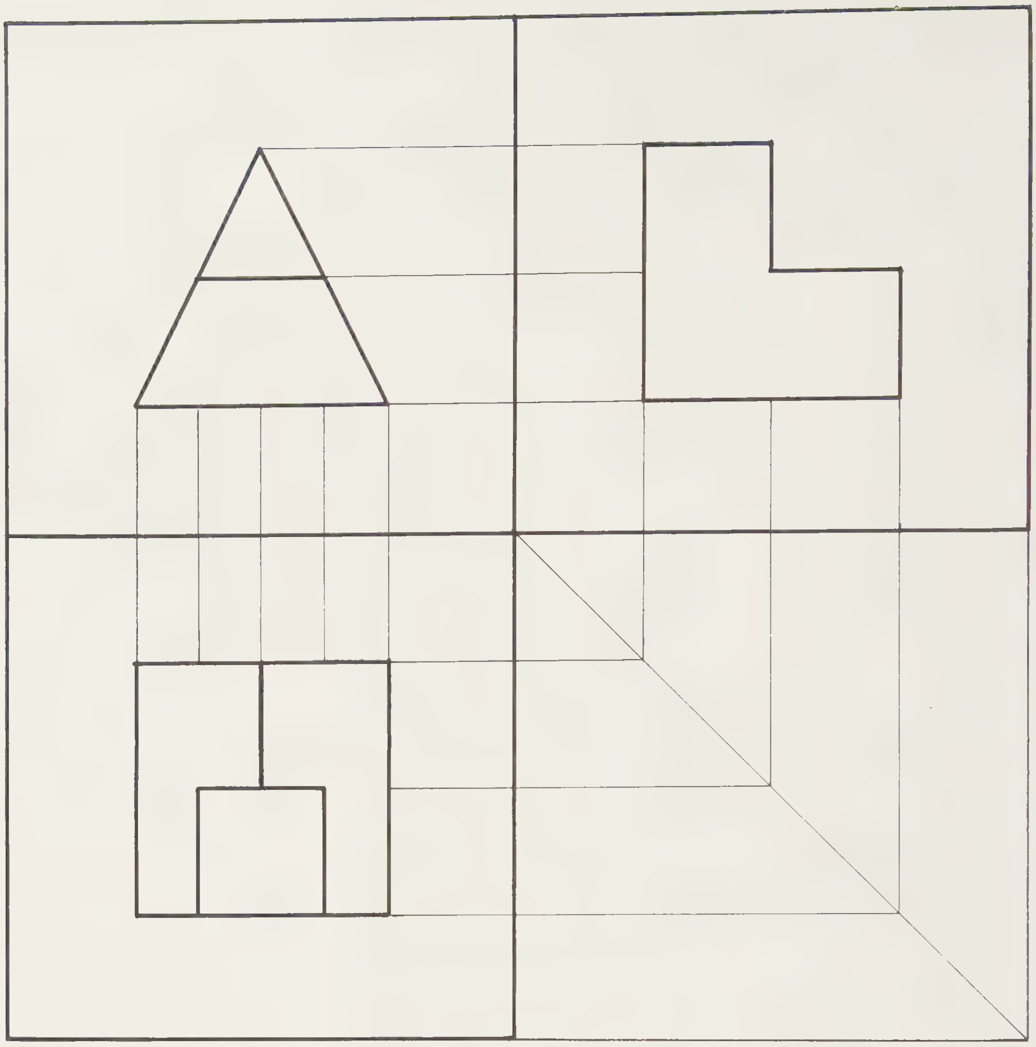


A foreshortened circle is divided into eight sections. The proportions of the angles from the half or quarter circle on the ground line are extended upward at the edge of the cube. The circle and the back corner of the cube happen to intersect in this drawing. Optional angles from the frontal circle can be transferred to the ellipse if the height proportions of the circle are inserted on the left edge of the cube.

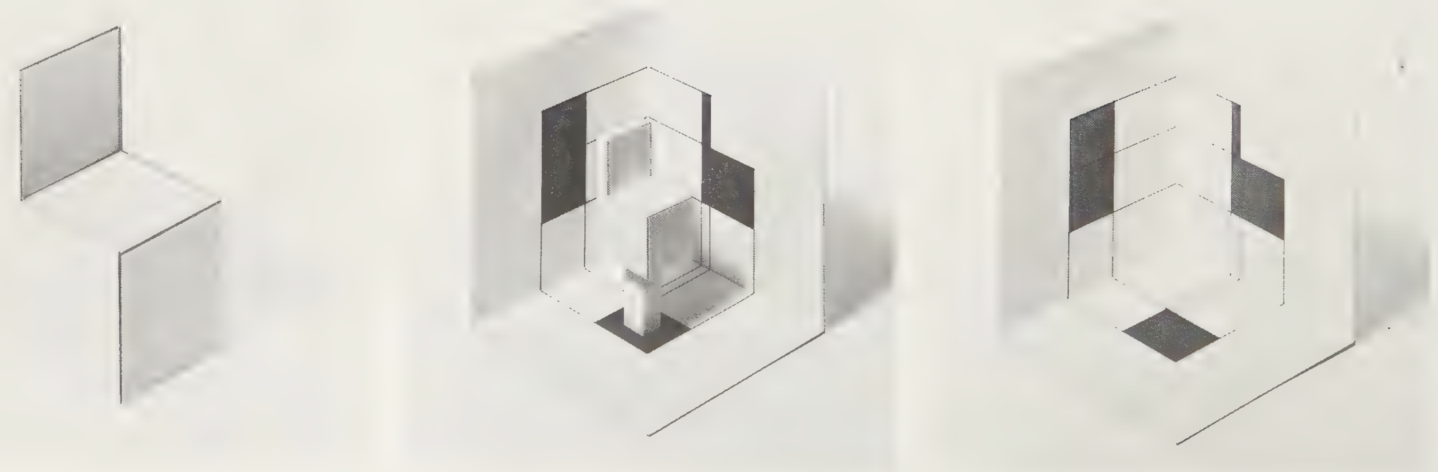


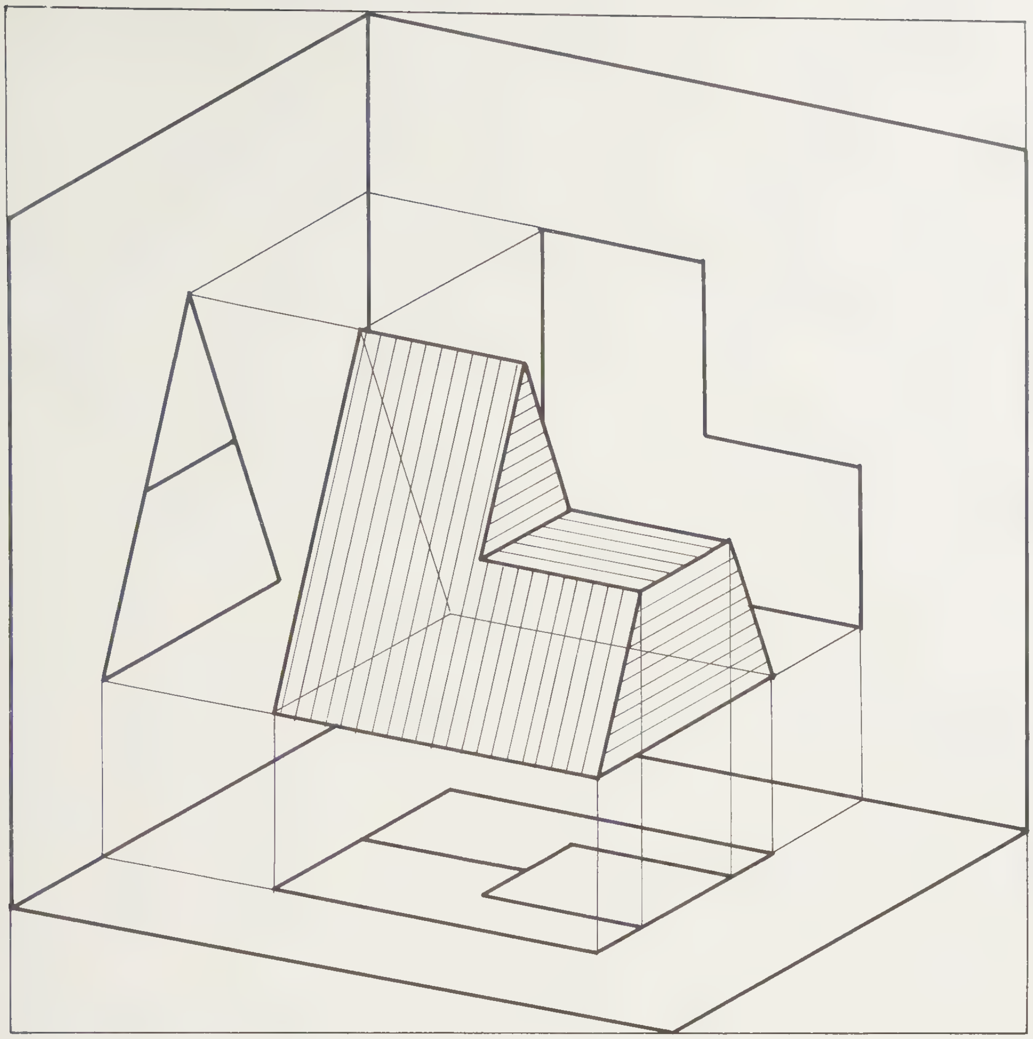
If an element is elevated and turned uniformly on an axis, it produces a screwlike or winding line that is often incorrectly called a spiral. The constructed ground ellipse with its subdivisions is shifted in a parallel direction corresponding to the individual height levels. Elevation of the ground subdivision produces the individual sectors. The enclosed cylinder forms the shaft of the resulting winding stairs.

Right-angle parallel projection of three planes is the basis of all technical drawing. It is best demonstrated with an open cube or a dimensional corner so that students can determine the form of the object. The procedure can be reversed: from two given projections of the same object the third must be found.

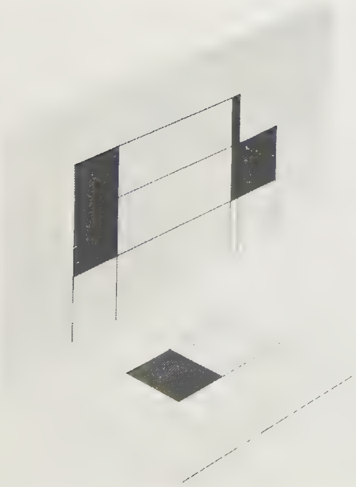


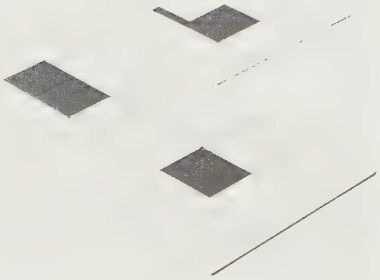
These photographs of a model with movable planes demonstrate three-part projection. The shapes and dimensional features of the model can be prepared with wires. The turned position in front of a vertical glass plate is used to explain central projection: the appropriate threads are drawn through previously determined penetration points in the glass plate to produce the perspective picture.

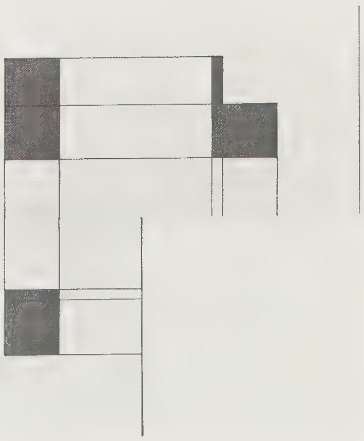




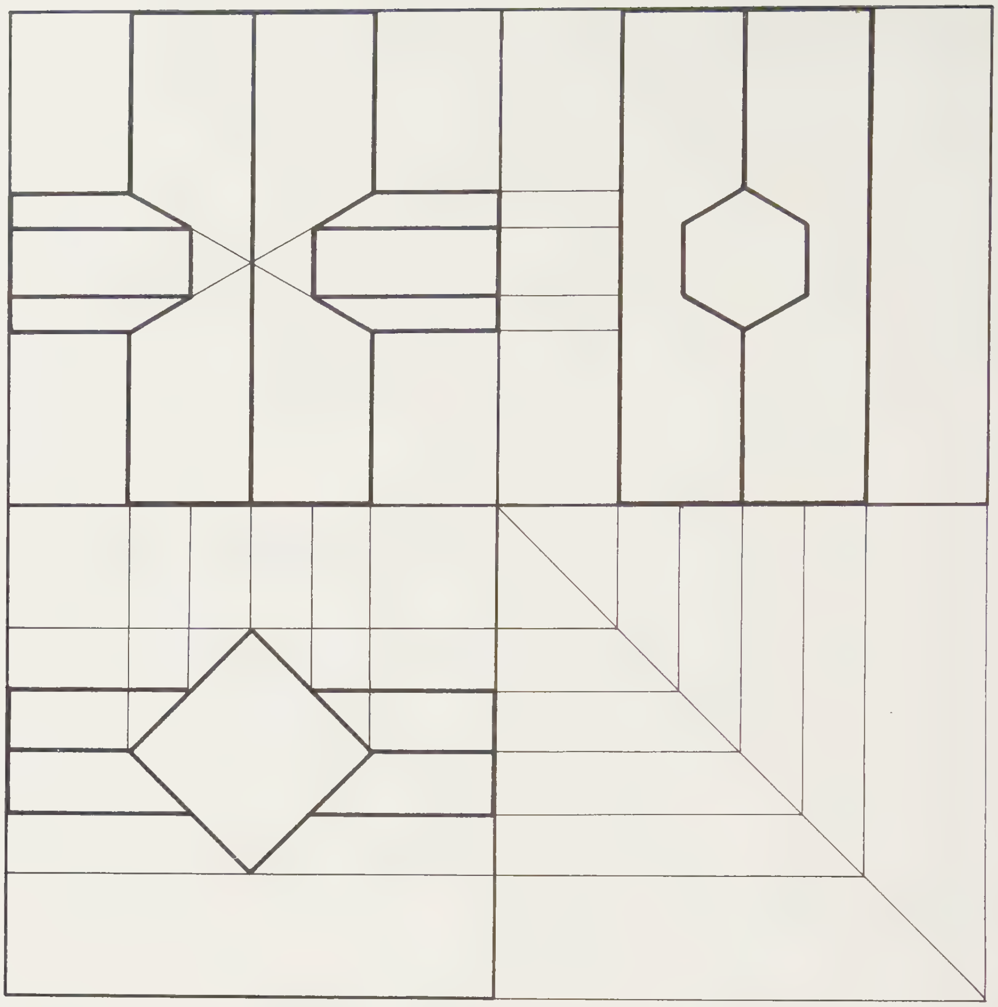
The projection planes are opened in a flat position to show the most important contours and internal lines of the object: front, ground, and side planes and front, top, and side views. A true technical drawing utilizes size, scale, material, working and tolerance specifications, cross section, and details to produce the object precisely.

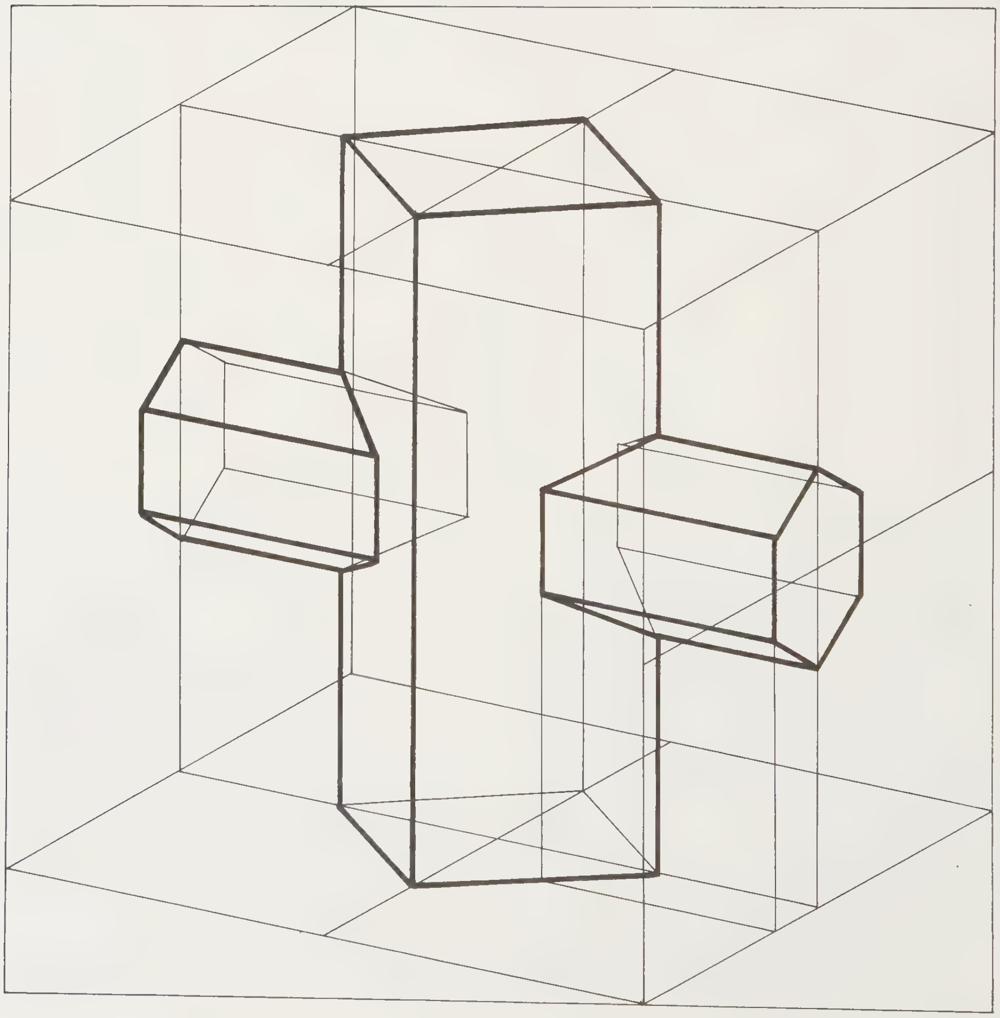


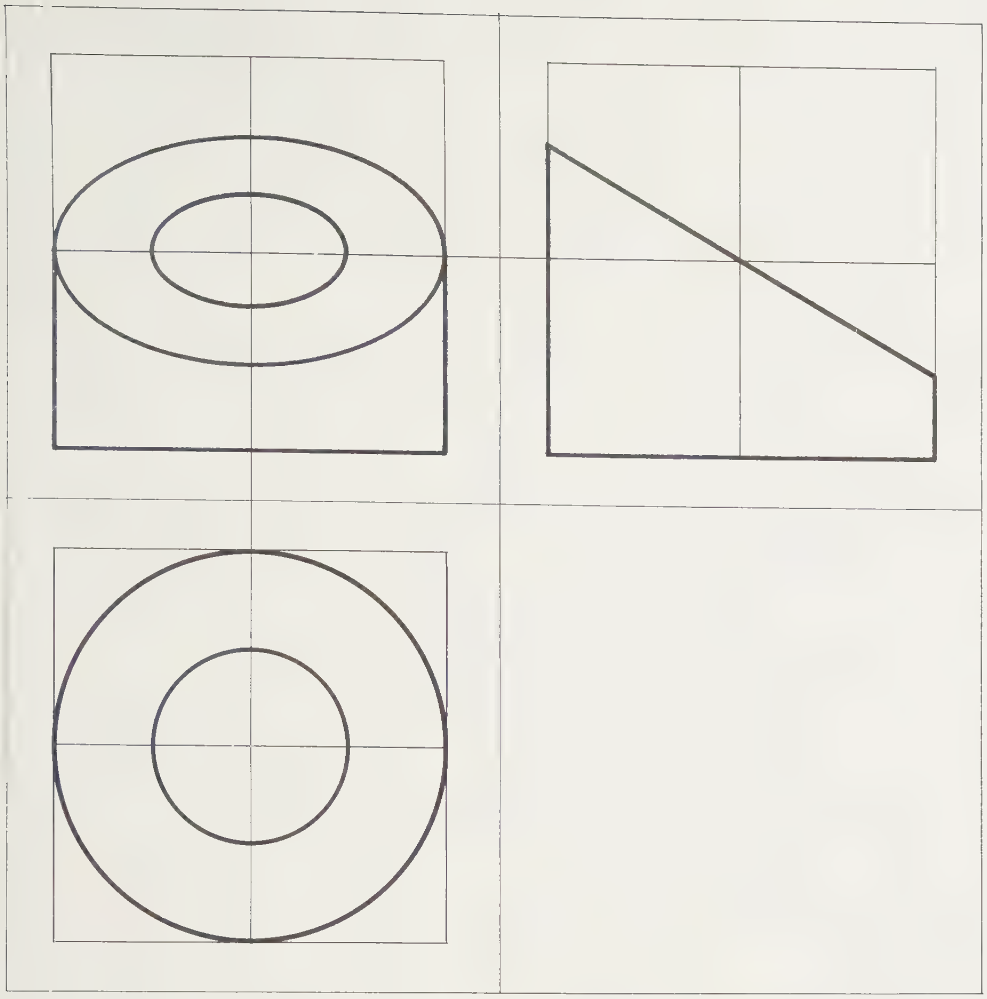




Ground and side planes of an intersecting square and a hexagonal prism are given. In the desired frontal view representation the penetration points are constructed through parallel shifting of the width and height, foreshortening individual lines at the intersection. Likewise, the entire exterior surface of such objects can be drawn on thin cardboard, cut out, and constructed as a model.

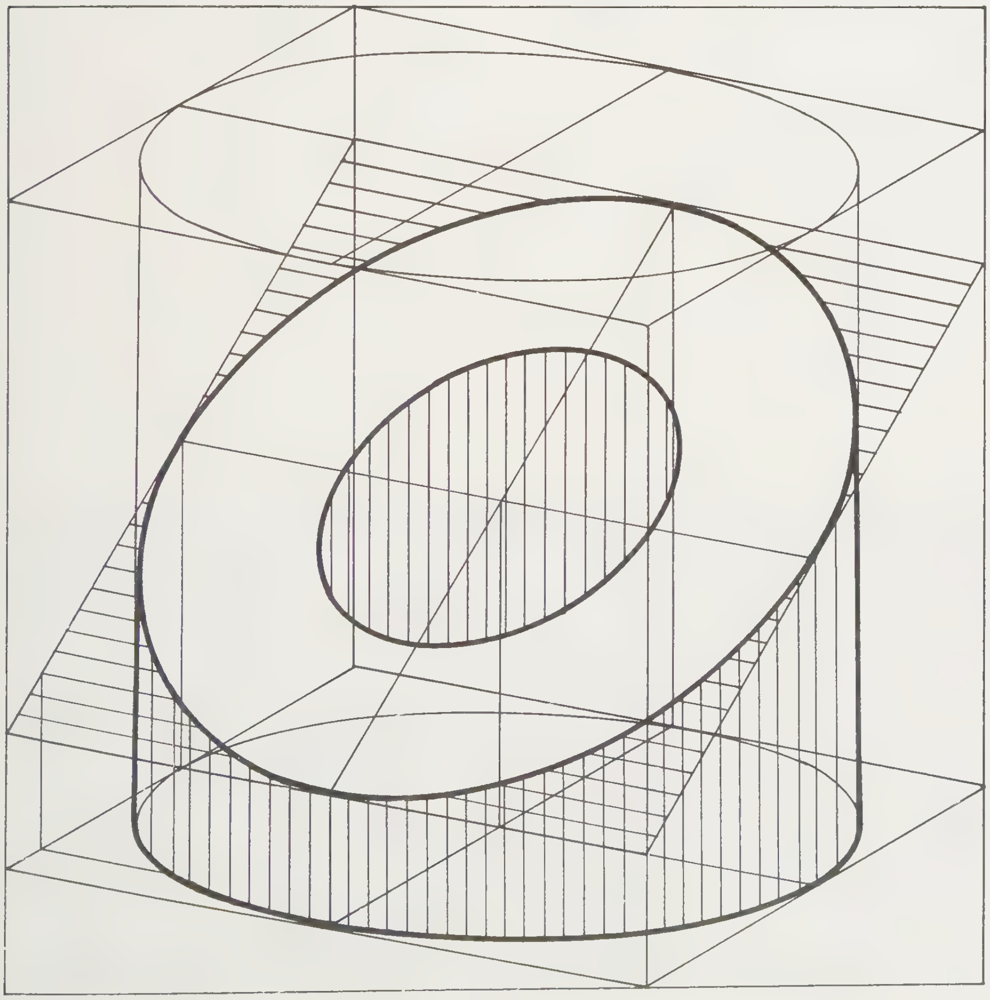






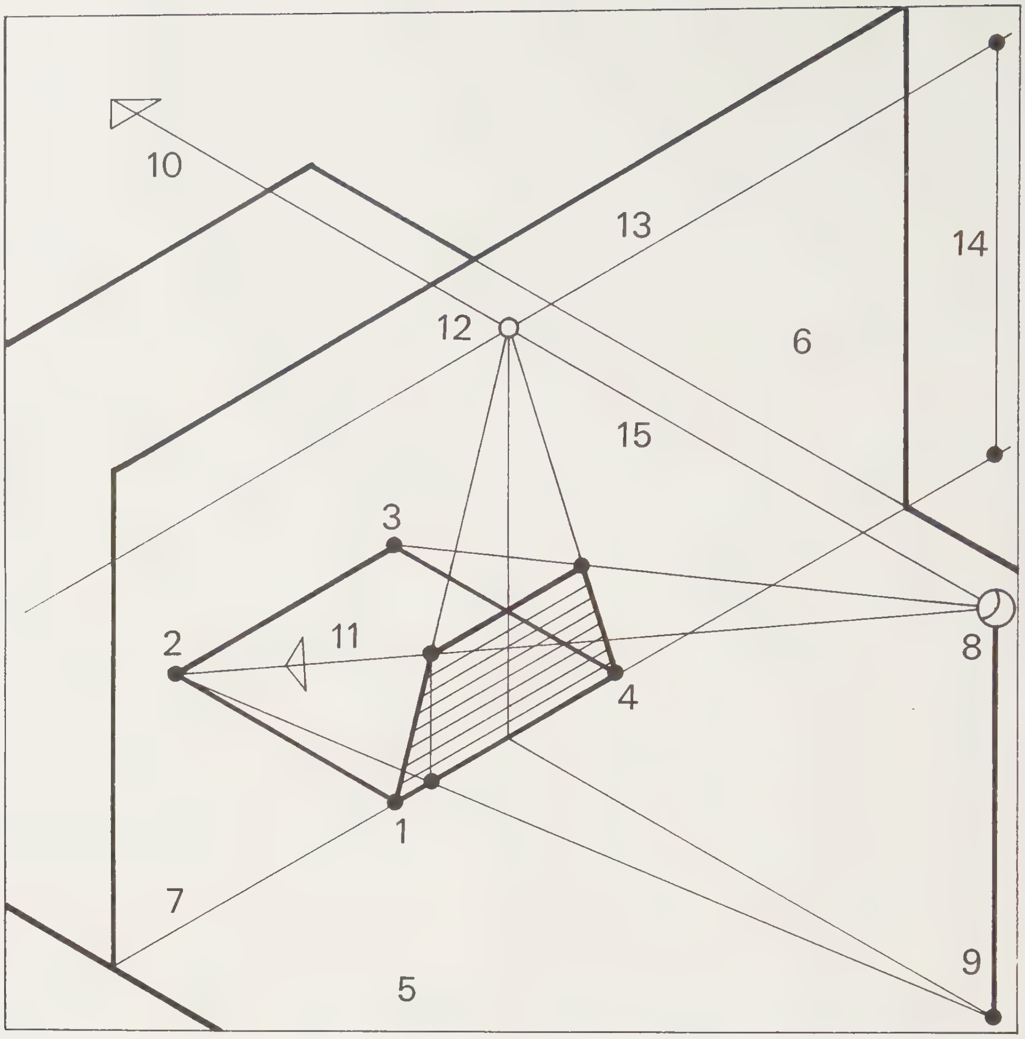
Changing from right to oblique angles parallel projection is simple with experience from the preceding exercises. For complicated objects the student must determine the axial direction of the cube in which the cross section is to be drawn. This prevents a strong foreshortening effect in the drawing. With the produced model such problems are investigated and clarified.

The cylinder, cut at an oblique angle to the axis of rotation, has an elliptical outline on the sectional plane. Dividing the ground-plane angles equally, transferring the ground to the side plane, and combining both views give the points of the ellipse on the frontal plane.
The students try to find further possibilities of penetrations. Difficult combinations such as cone-sphere or ring-pyramid are avoided at this stage.

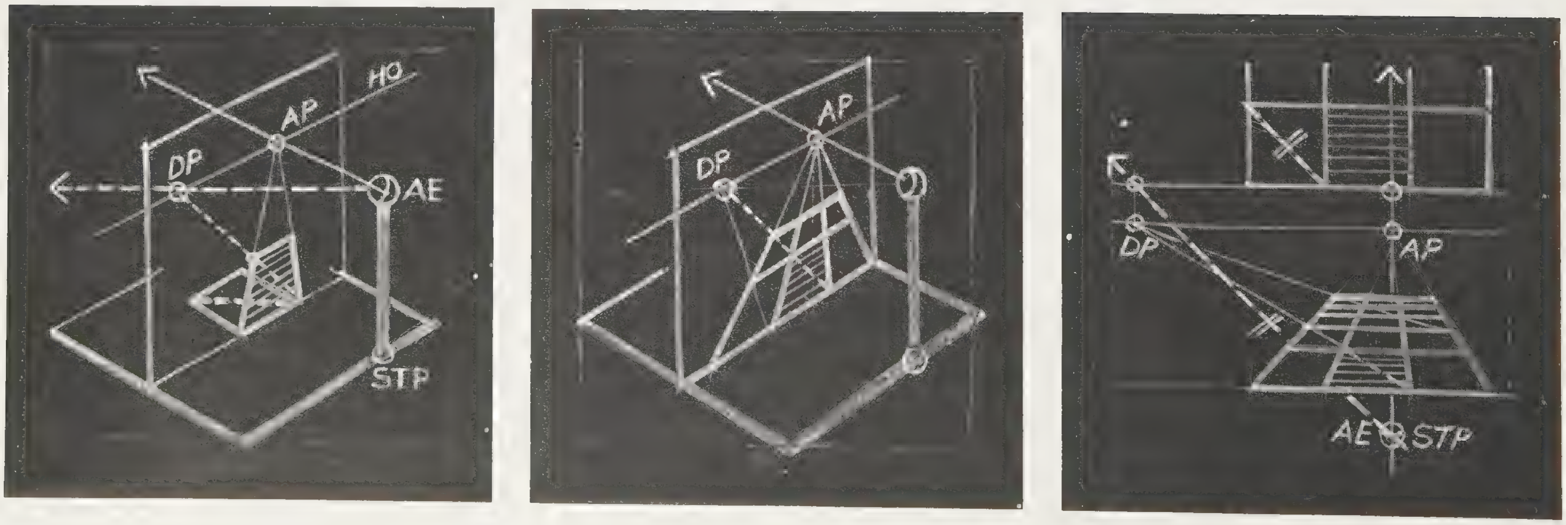


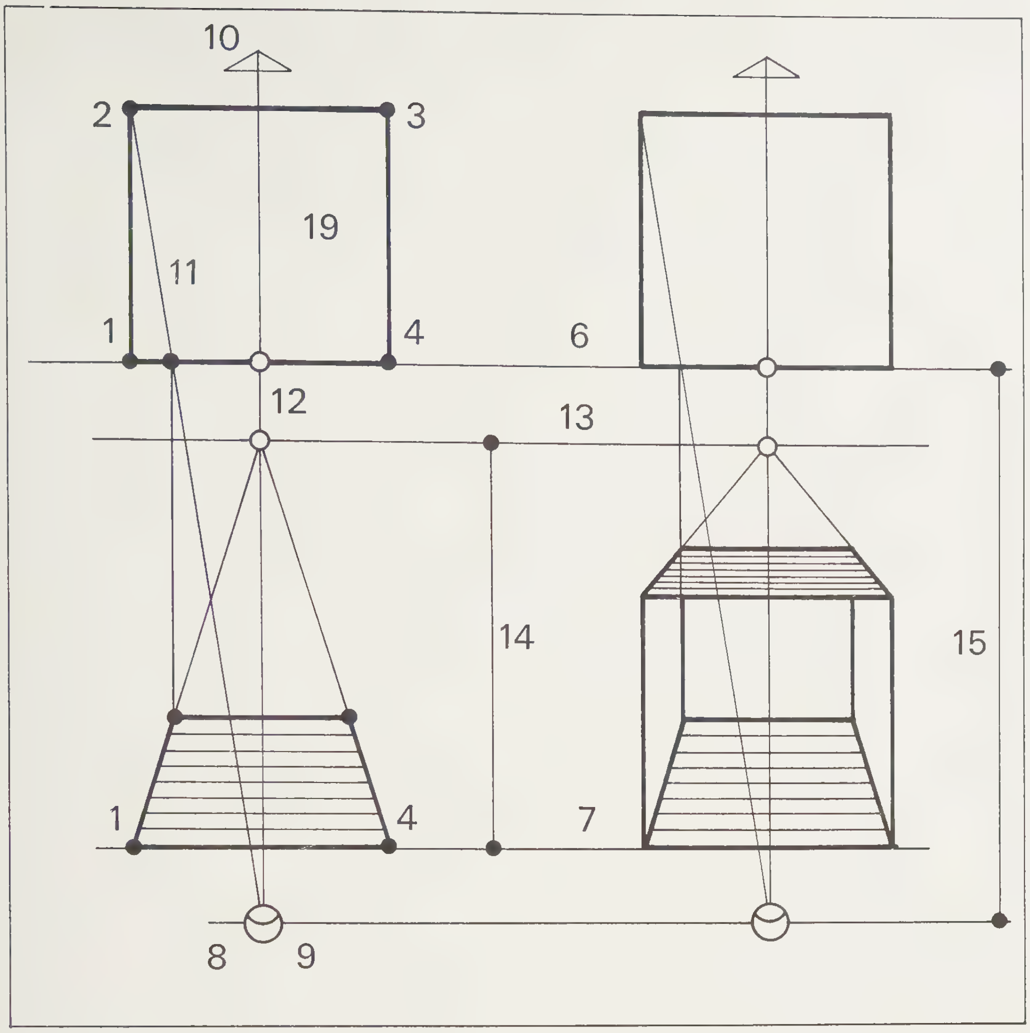
If a model of the cut cylinder is produced, it is important to determine the actual size of the sectional plane. The corresponding measurements are transferred from the ground plane at right angles to the intersecting line formed through the large axis of the ellipse. The actual lengths of the foreshortened lines are drawn on the blackboard.

Central perspective is derived empirically: it is not proven mathematically. In linear drawing objects represented in central perspective appear as if they were seen with one eye from a given viewpoint. Light rays that reach the eye from the object are replaced by constructed visual rays that strike the object from the eye. The fundamental principle of central perspective is the central projection: the visual rays of the observer penetrate an imaginary picture plane, and the penetration points produce the central-perspective image.



The theory is explained on the blackboard. These photographs show how the diagonal point in the model is determined and, on the right, the final perspective.



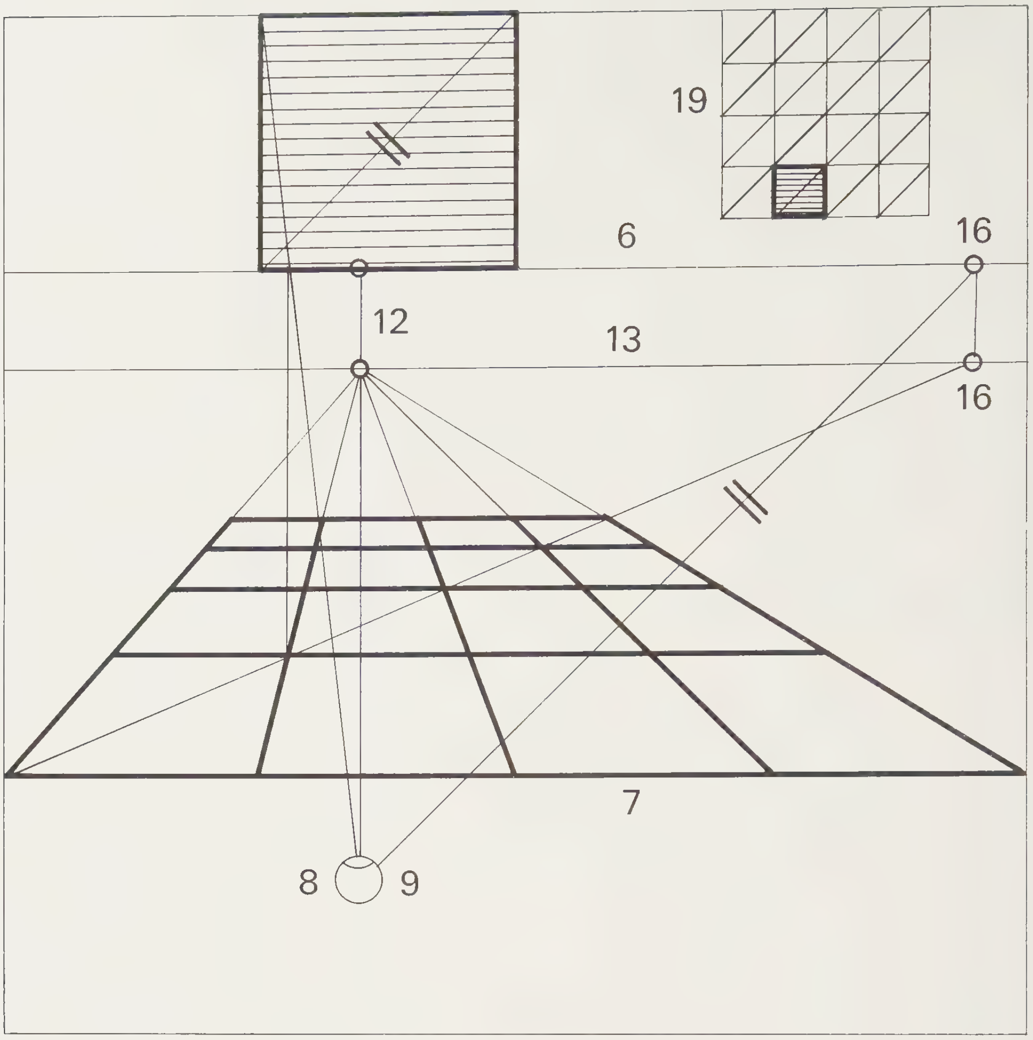


The procedure is explained with a model and represented graphically. The construction of the model exhibits the principles that the eye point is the vanishing point for all parallel lines that are perpendicular to the main visual ray and that lines parallel to the picture plane remain parallel in the projection.

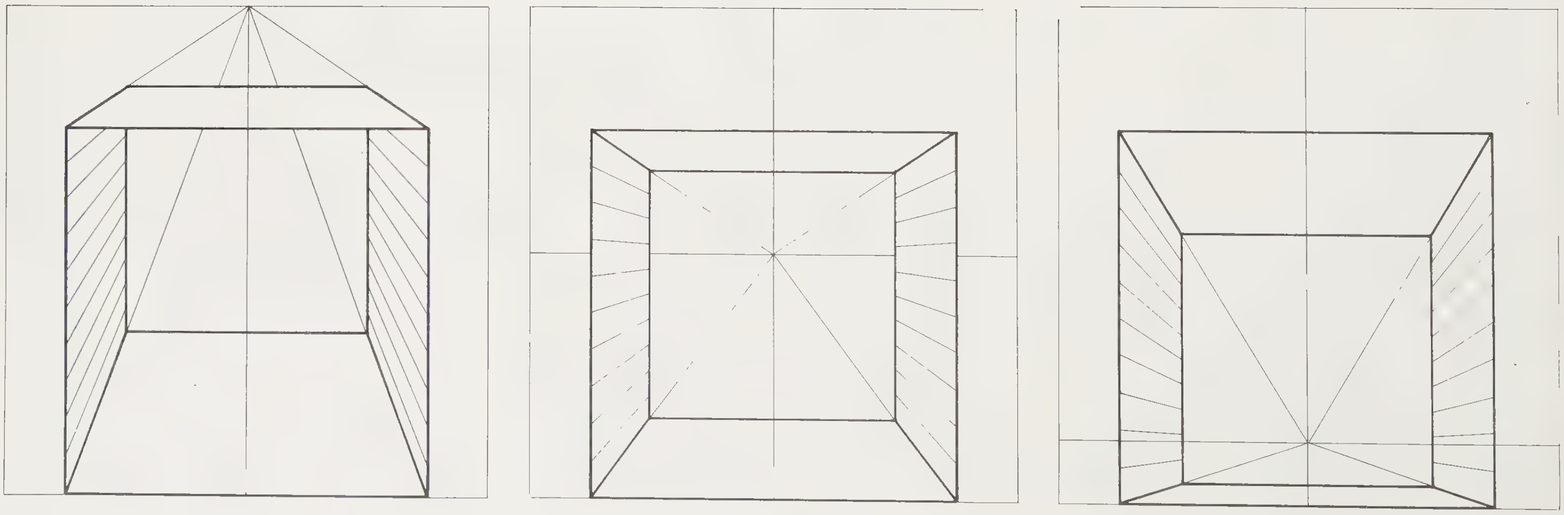
Key to the numbers in the examples shown here and on the following pages:

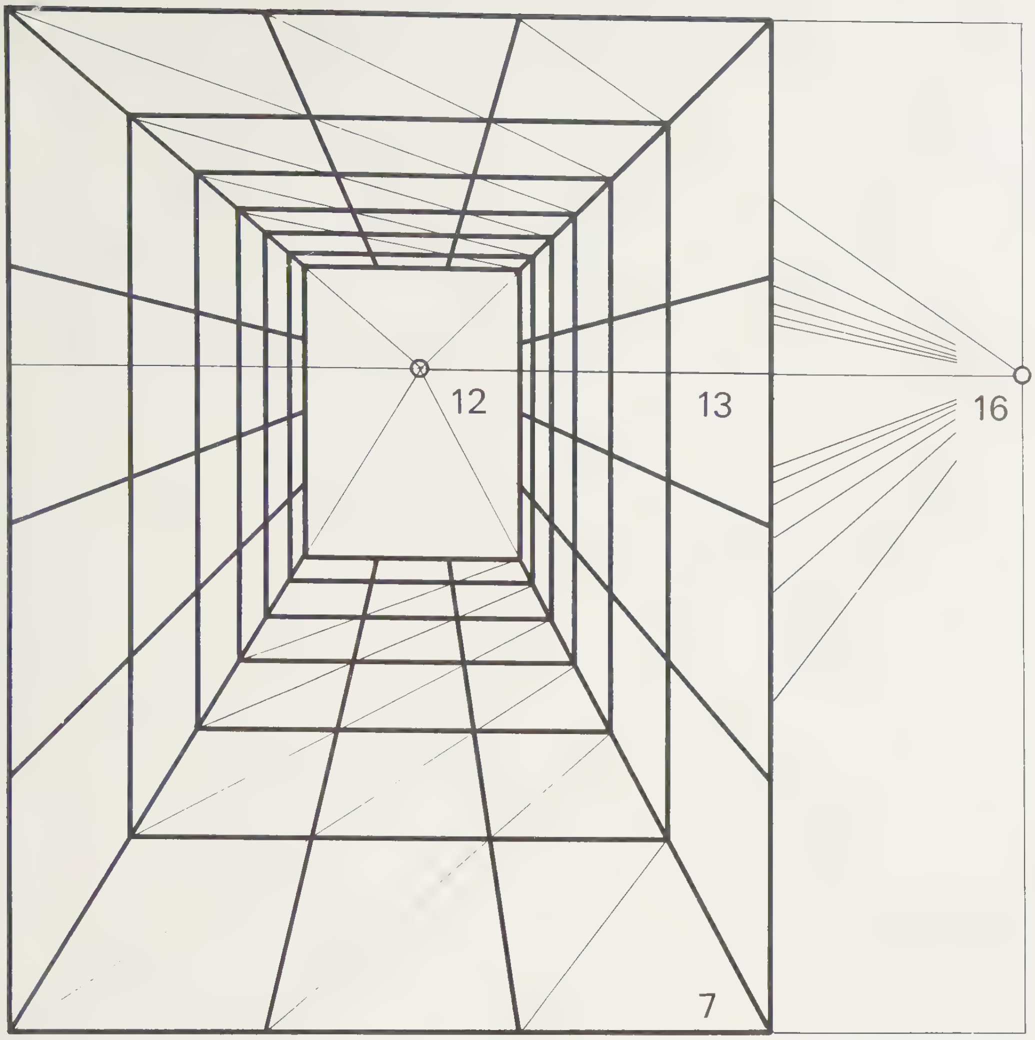
1. corner of a square
2. corner of a square
3. corner of a square
4. corner of a square
5. ground surface
6. picture plane
7. ground line
8. eye
9. standing position
10. main visual ray
11. visual ray
12. eye point (main point)
13. horizon
14. height of horizon
15. distance
16. diagonal point
17. left vanishing point
18. right vanishing point
19. plane
20. frontal plane

If a diagonal is drawn through a unit of area (rectangular solid, cube) on the ground plane, the remaining diagonals are parallel to it and retain the diagonal vanishing point (16) through the intersection of a visual ray running parallel to the diagonal. In this way entire spaces can be constructed from a single given unit of area.

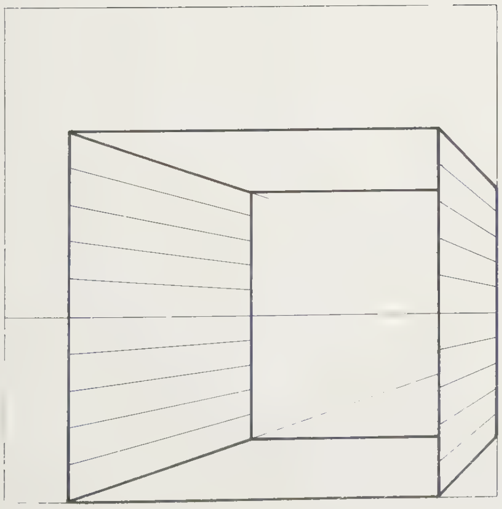


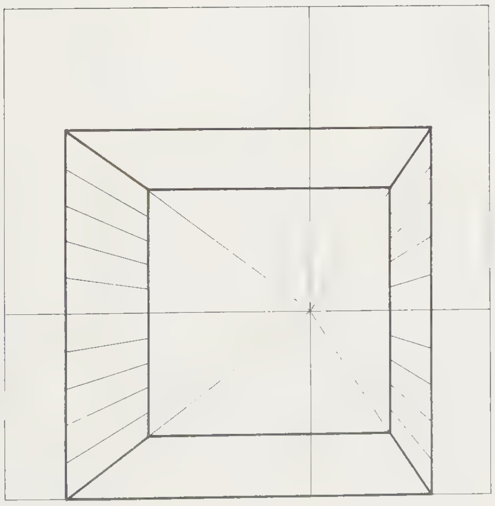
Some variations of frontal views with a cubistic space are shown from left to right: high horizon, strong floor view; normal view, extreme angles avoided; lower horizon, strong ceiling view; strong side view, spatial distortion; normal view, slightly asymmetrical: and above, in the last example the representations are rectified by twisting the object or picture plane, shown below, strong views from above and below are corrected with converging lines. This procedure is reversed in photography.

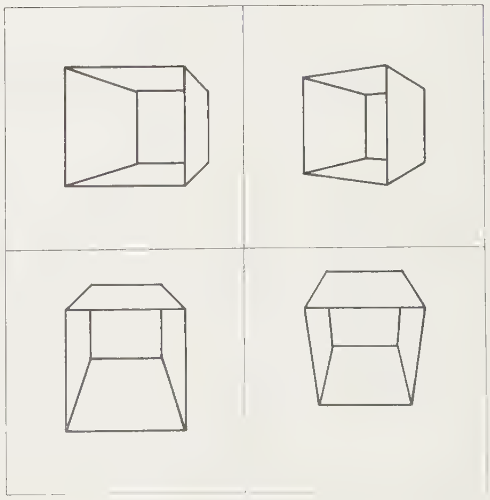




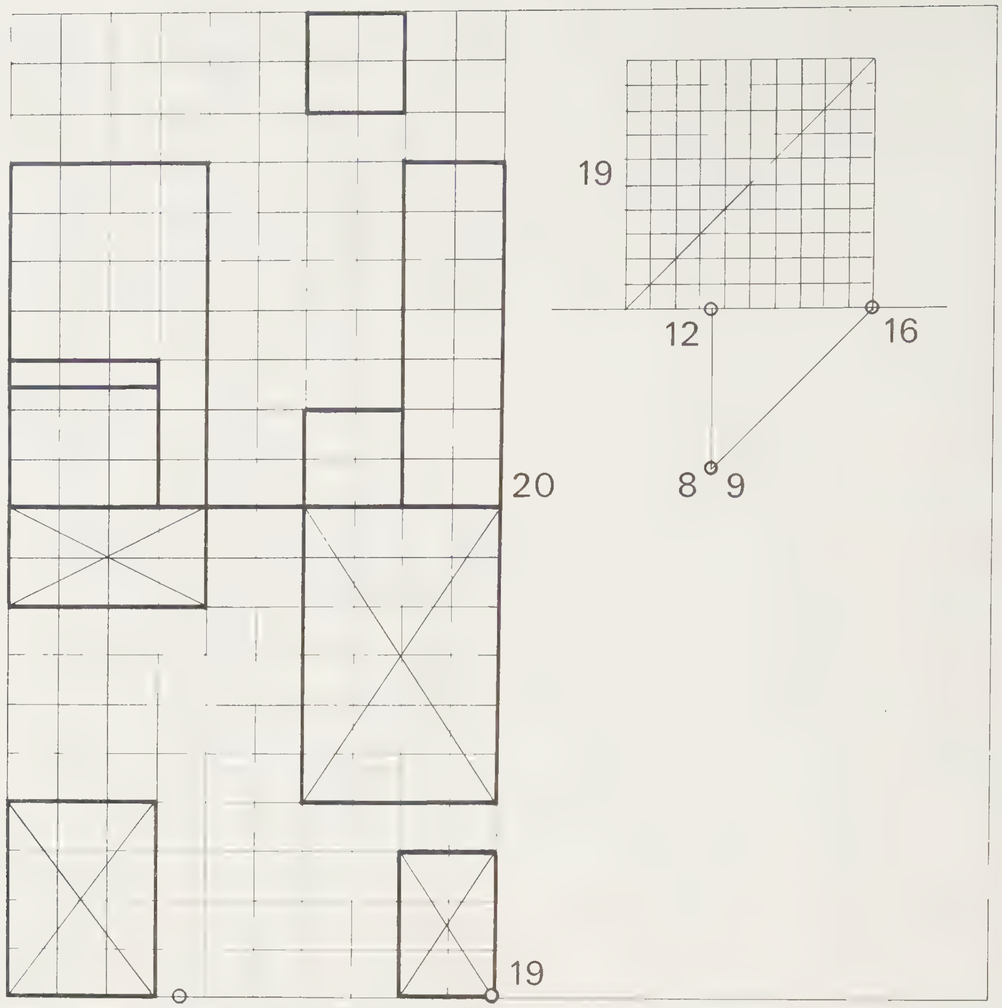
The horizon of the resulting dimensional grid is relative: the picture can be turned to change the space and the expression. If additional space is constructed beyond the ground line, the individual fields become increasingly distorted (7), similar in effect to a photograph taken with a wide-angle lens. New points can be inserted between (12) and (16) by dividing the line: halving or quartering, for example, skips of two or four units of volume, respectively, in the perspective.

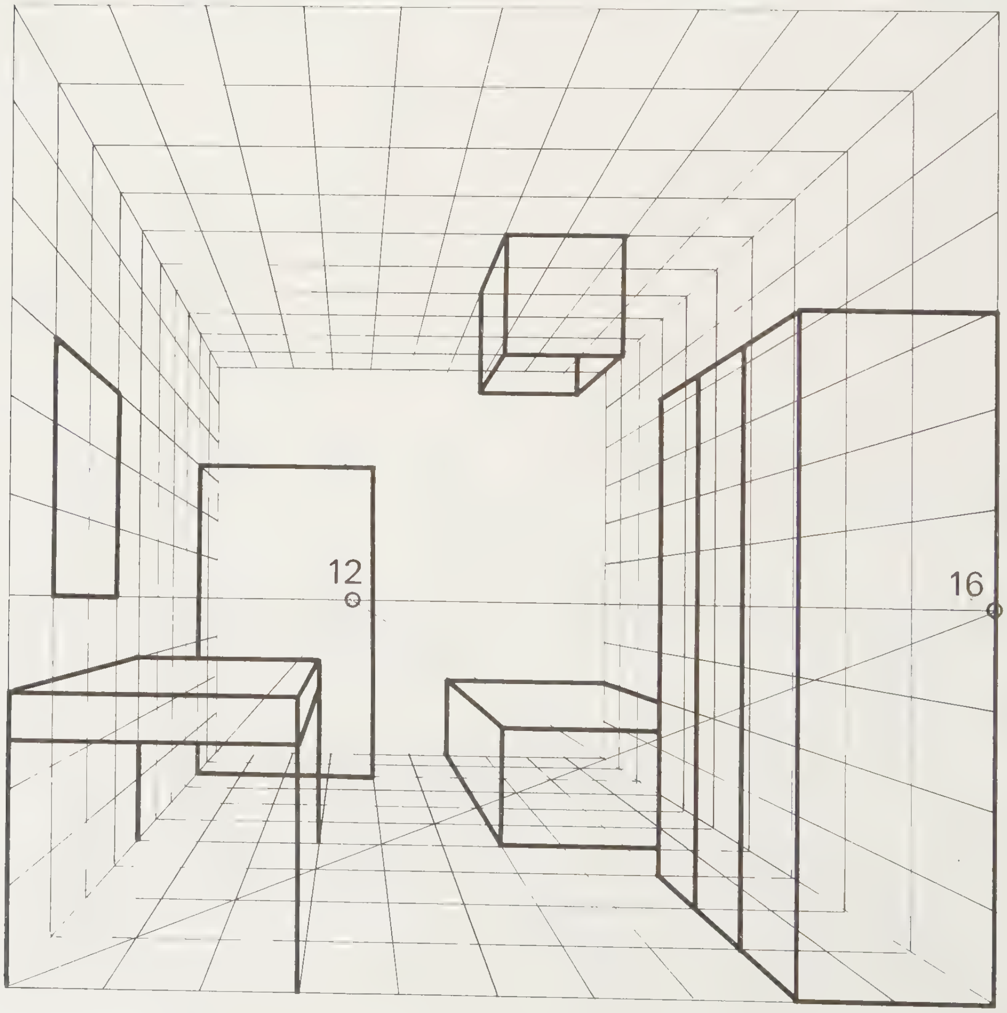


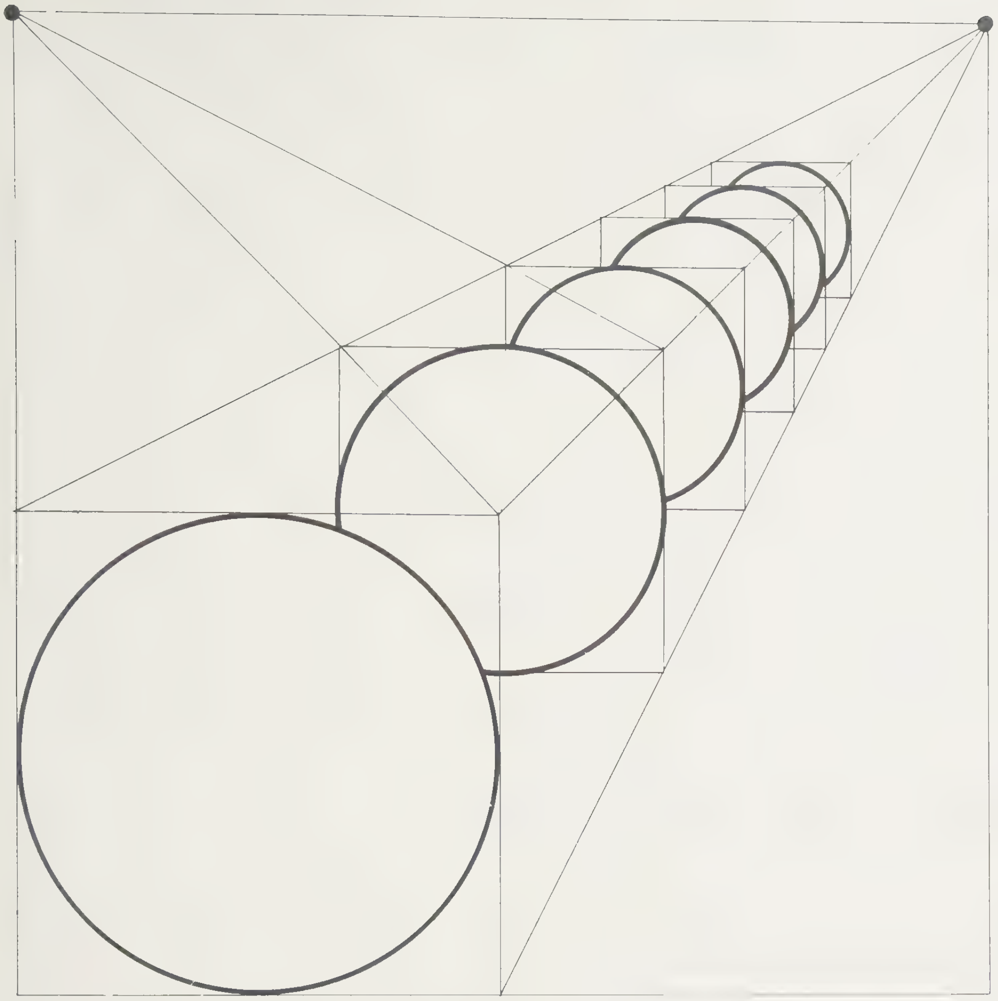




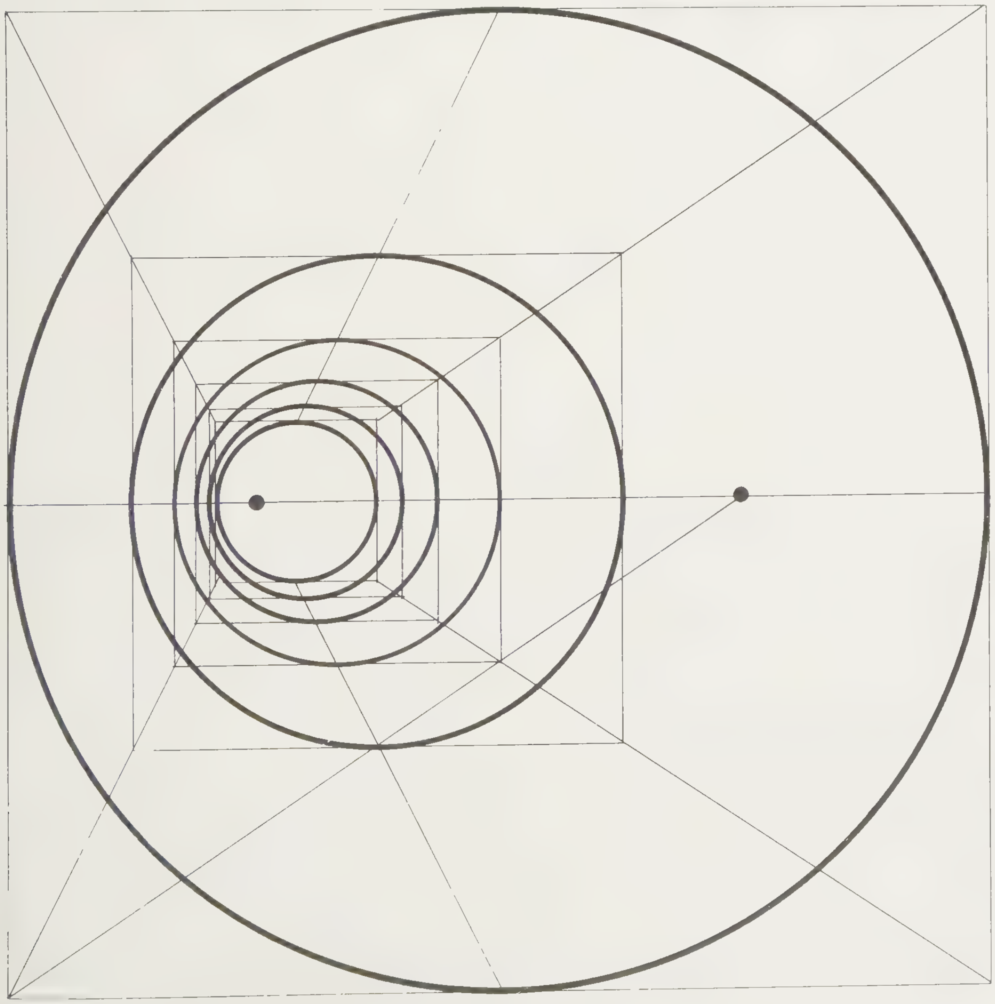
Frontal and ground planes are covered with a grid. In a reduced-ground-plane situation vanishing points are inserted and correspondingly transferred to the measurements of the enlargement at the horizon. Correct transfer of scale is possible only on the ground line and on the tangential perpendicular standing lines (measuring edges). The horizon is adjusted to the height of the space and should not coincide with the edges of objects, as in the frame on the left wall in the drawing below.





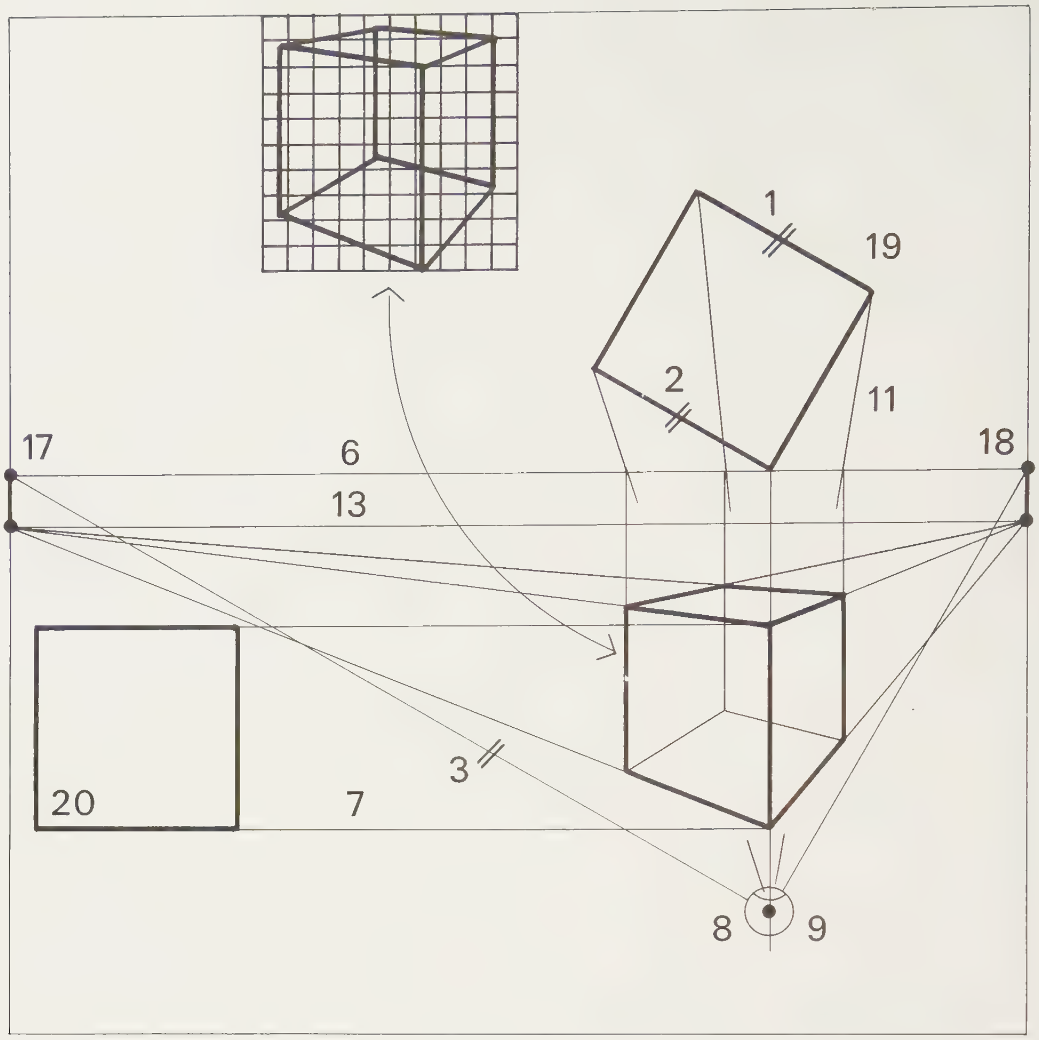


In this frontal diagram of a circle the visual rays from the points of the circle form a cone that is cut by the picture plane. The conic-section circle, ellipse, parabola, or hyperbola is produced, depending on the position of the picture plane. The circle is represented as a circle only if the axis of the cone is cut by the picture plane at a right angle. The sphere forms a circle only if its center lies on the main visual ray.

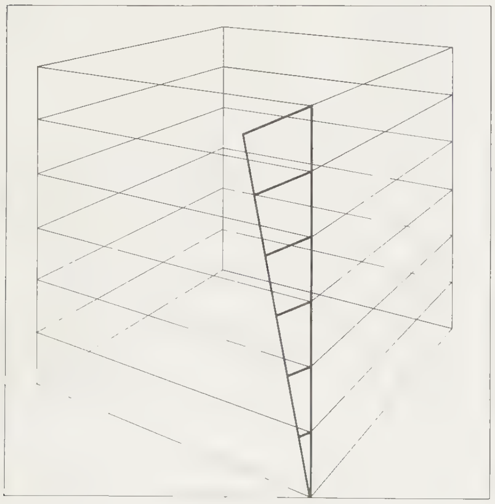


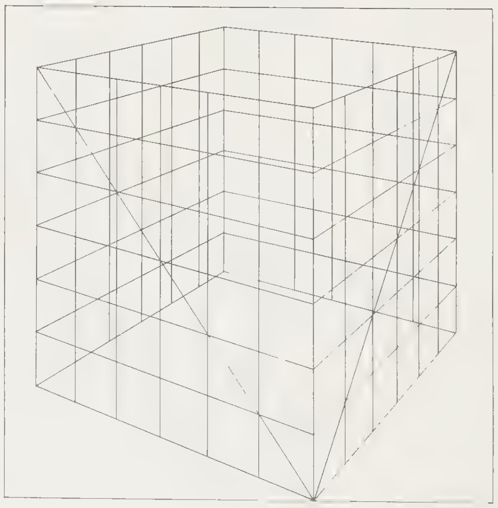
Frontal circles without overlapping shapes are foreshortened regularly in depth according to the diagonal-point principle. Such depth illusions can be further strengthened by increasing or decreasing line thicknesses, producing concave or convex effects. In the examples on the left the view looking into a tube (the largest, heaviest circle) can be changed into a view of a truncated cone (the smallest, heaviest circle).

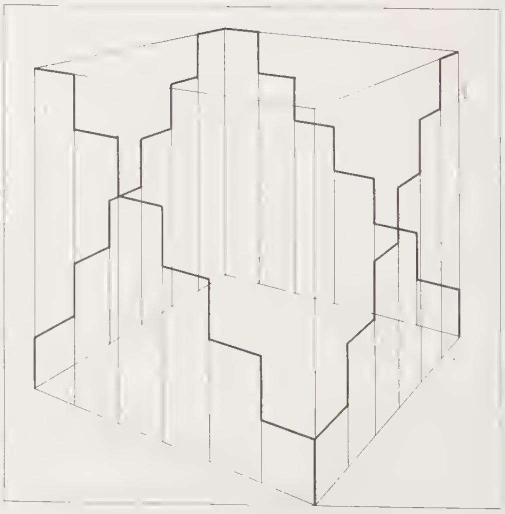
In contrast to the preceding illustration, the object lies obliquely to the picture plane in an over-the-corner representation. Both possibilities are central perspective. The left vanishing point (17) is found with the visual ray (3) that cuts through the picture plane parallel to the sides of the square (1, 2). The right vanishing point (18) is constructed in an analogous way. The height of the object is transferred proportionally to the edges (measuring edges), tangentially to the picture plane. The object is turned at the picture plane 30°–60° corresponding to the normal drawing triangle. If a lateral vanishing point lies outside the drawing paper, the perspective depth can be found with the other lateral point and with the eye point by constructing dimensional triangles.

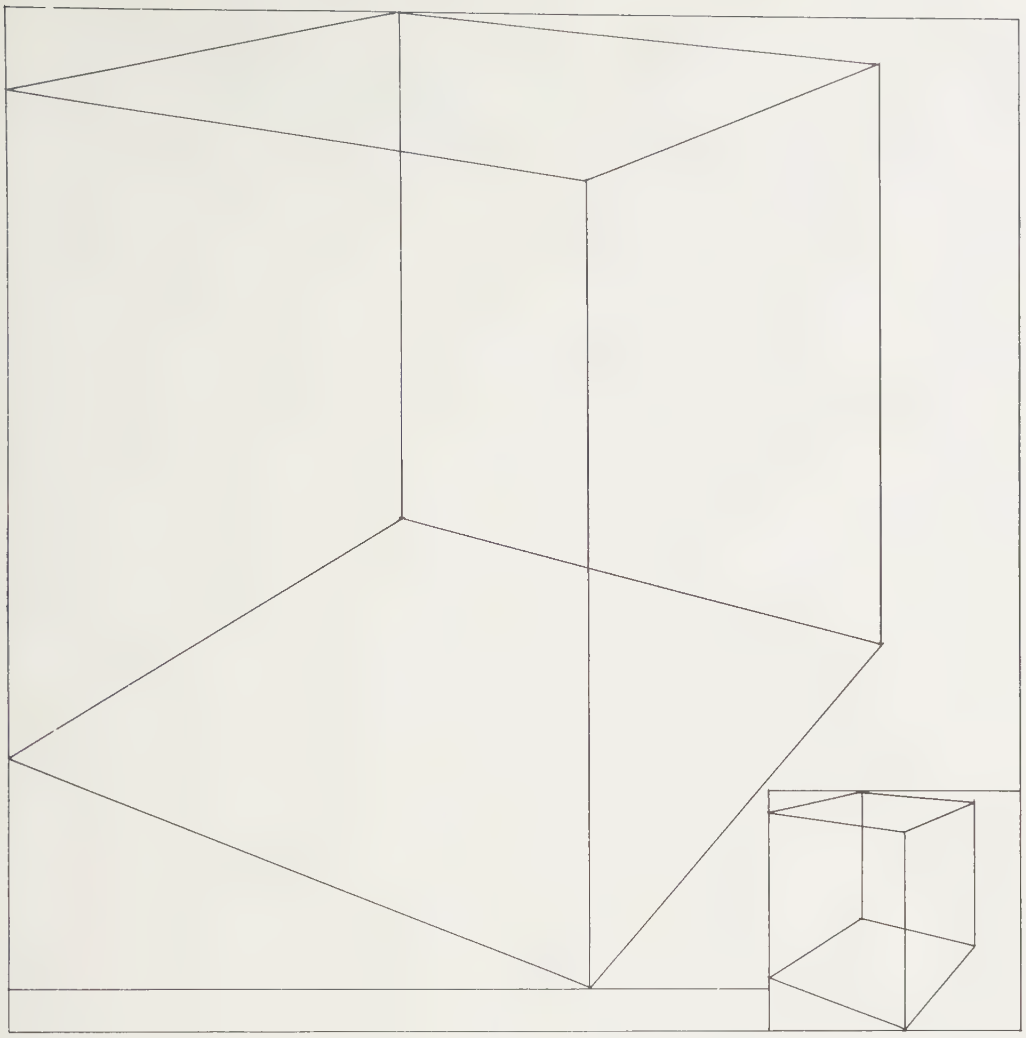


A fan structure of vanishing lines can be found by connecting the plotted proportional scales at the measuring edges and the remaining verticals. A dimensional grid can be found by inserting diagonals. Sections at the verticals can be located with the similarity ratio. The diagrams show the formation of stairs with angular or cubic steps.

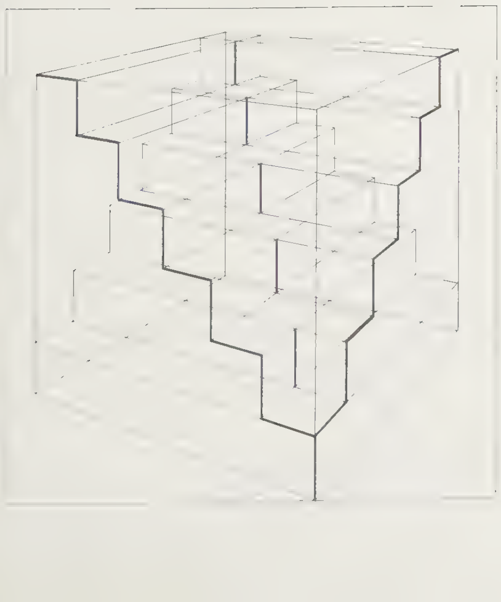


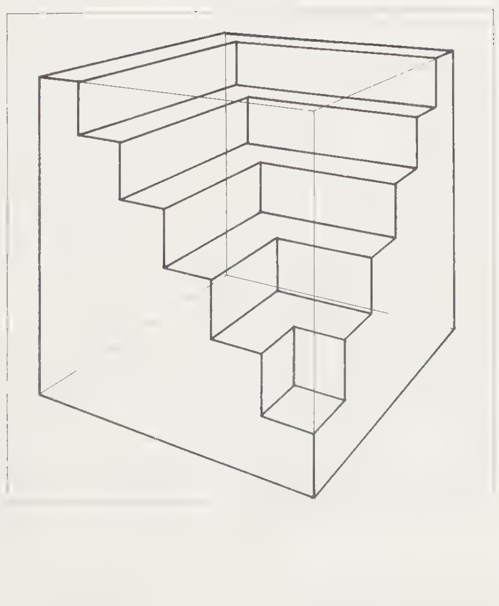


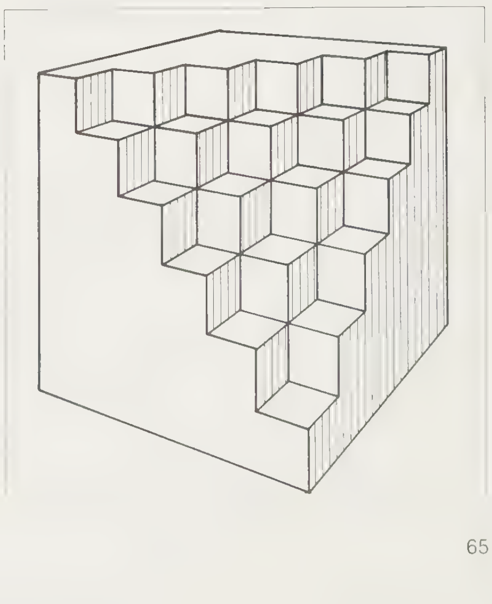




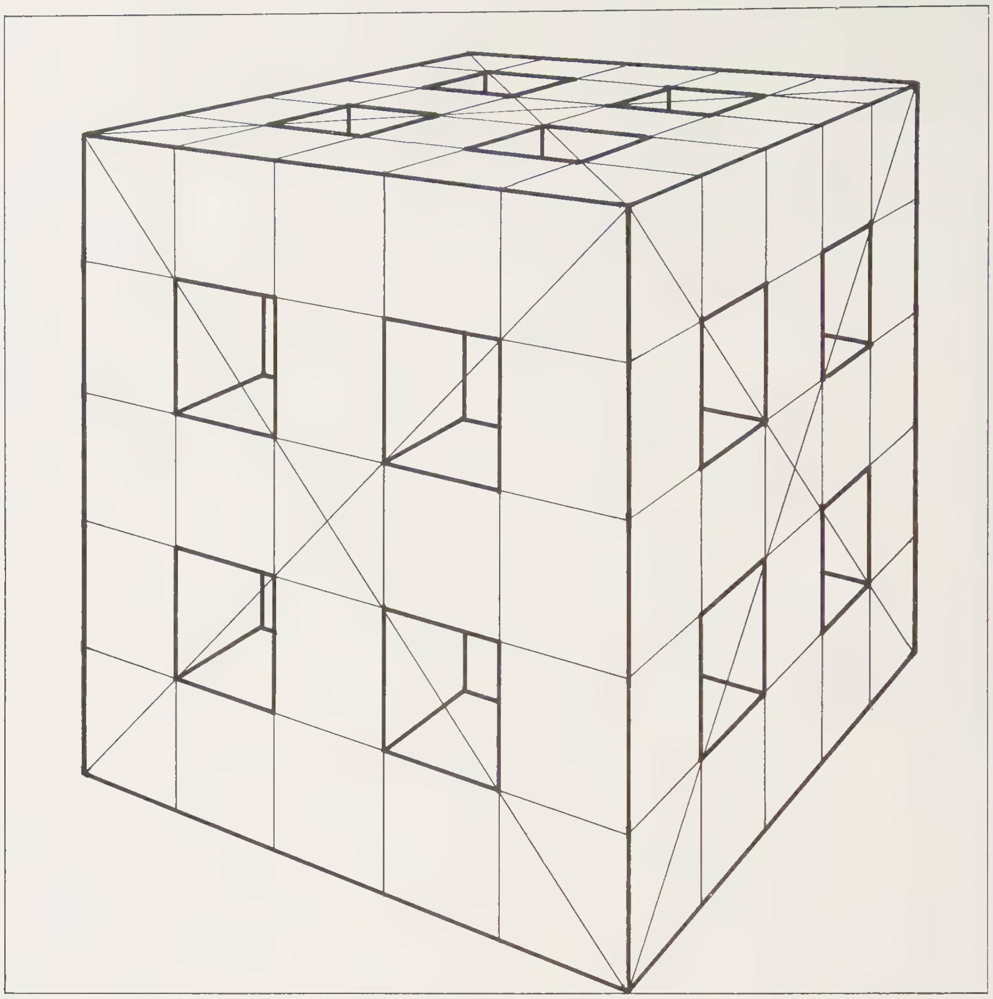
A dimensionally represented basic element (cube) can be proportionally enlarged with a grid. The enlarged illustration on the left serves as the foundation for the examples below and on the next two pages. They show how enlarged drawings can be subdivided in perspective without the use of vanishing points.



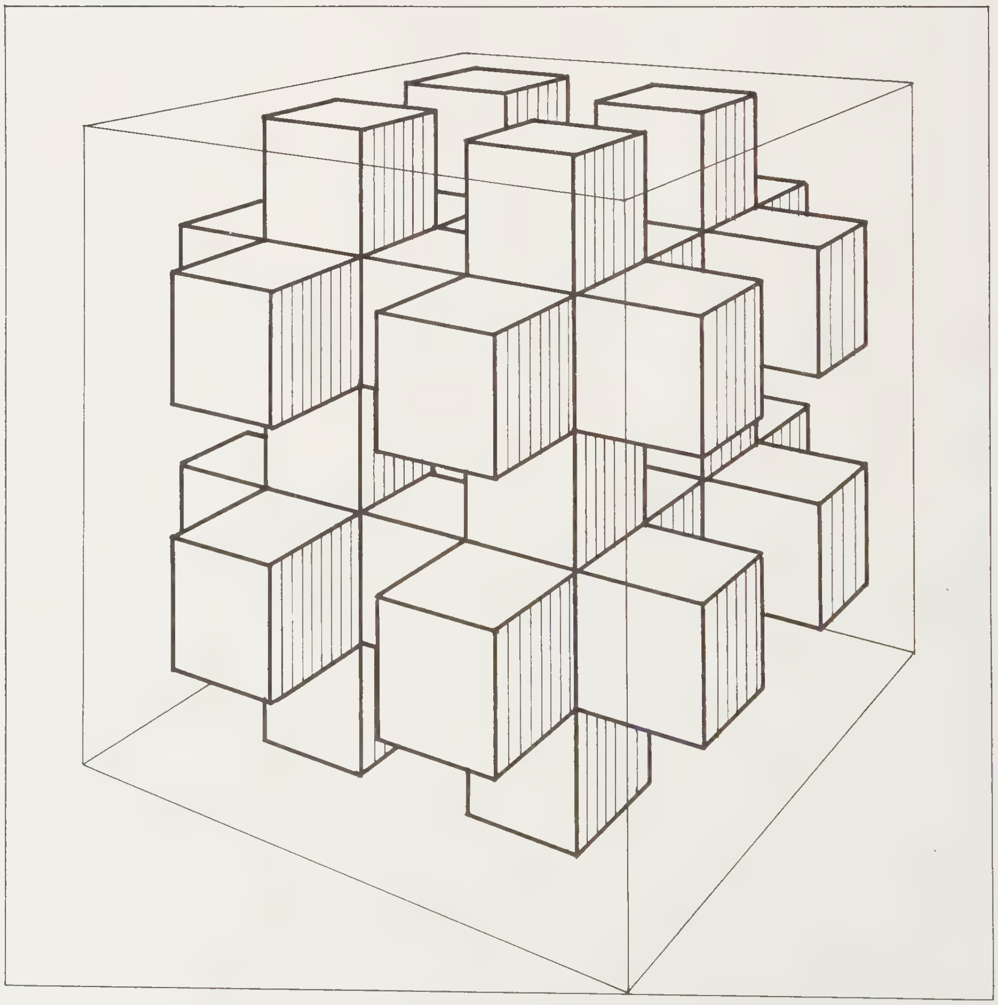


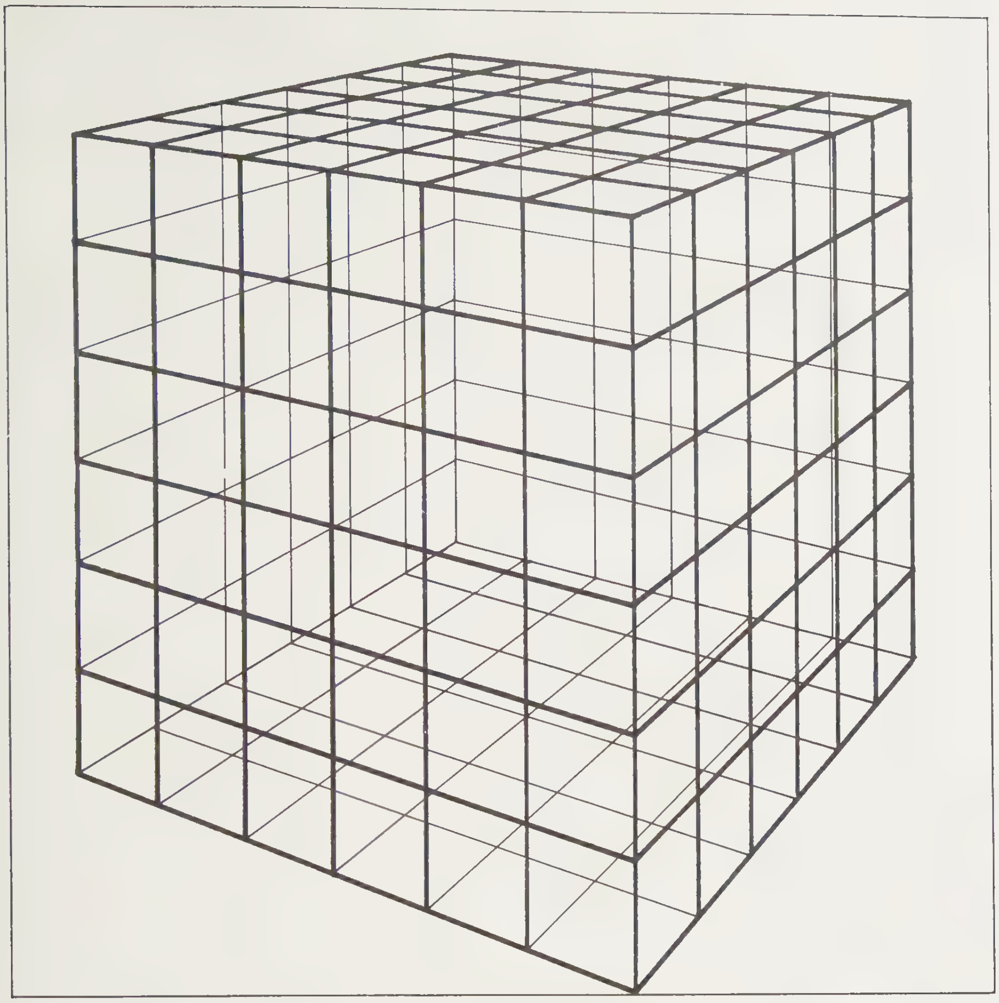


Regular perspective sections on the surfaces can be found from the sectional ground plane of the figure with visual rays or from the ground line with sectional or measuring points. The vertical subdivision on the right is constructed with regular transfers at the measuring edge and with the intersection of internal lines with diagonals.

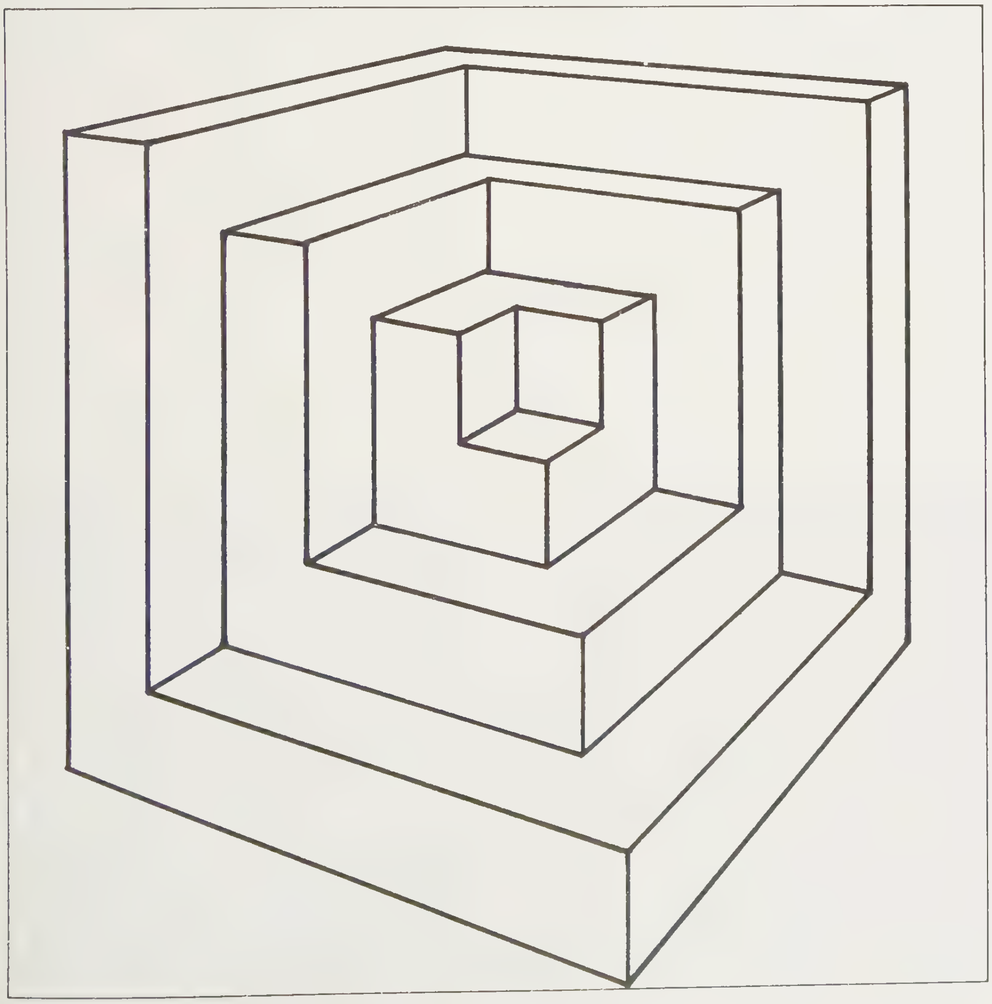


This illustration, constructed from the same grid, is an extension of the first dimensional representation (axial cross, dimensional knots). A model is likewise produced by the students. The four hollow cube knots are built from thirty-six solid cubes; the thirteen undrawn symmetrical axes and the nine symmetrical planes in each of the cubes can theoretically be extended through the entire model.



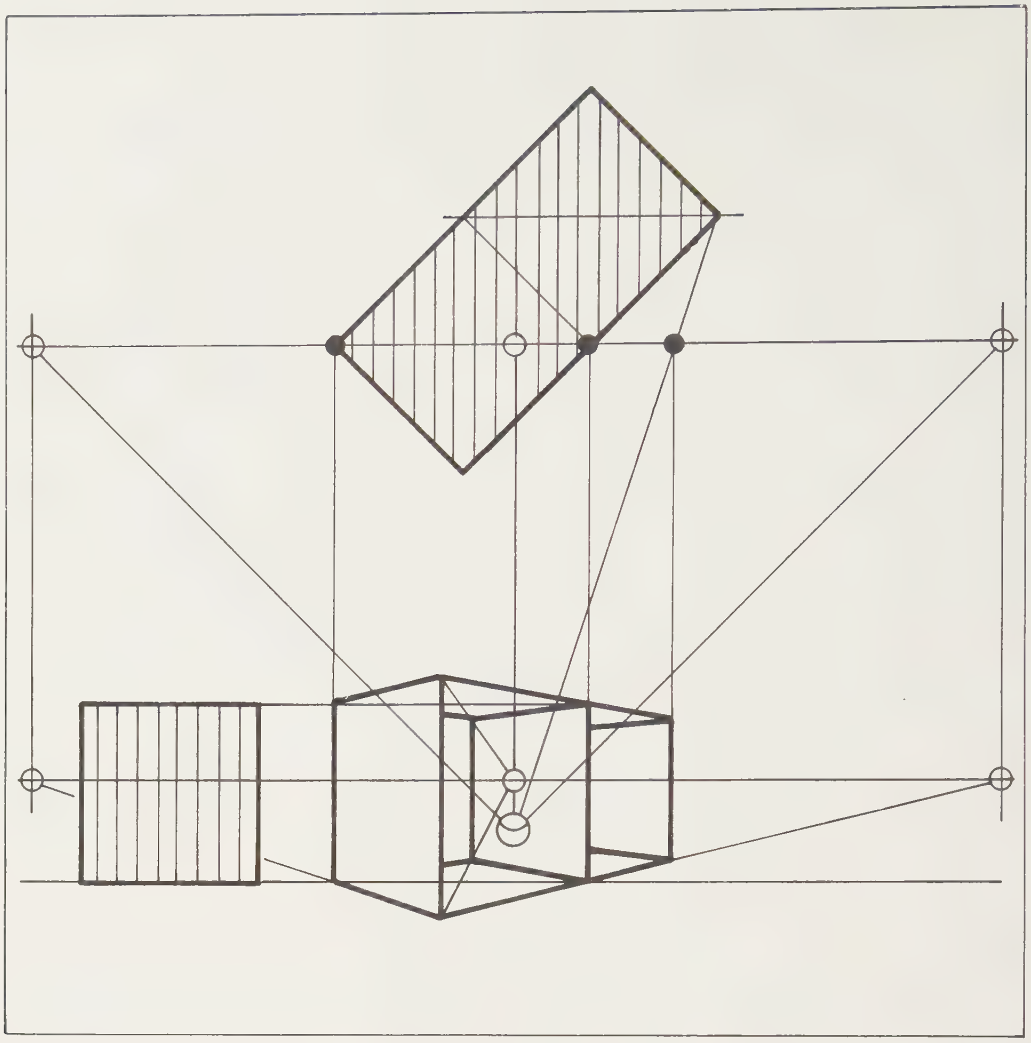


The students can trace prefabricated dimensional grids on transparent paper. Complicated dimensional details are clarified with different line weights, surface cross hatching, and colored pencils.

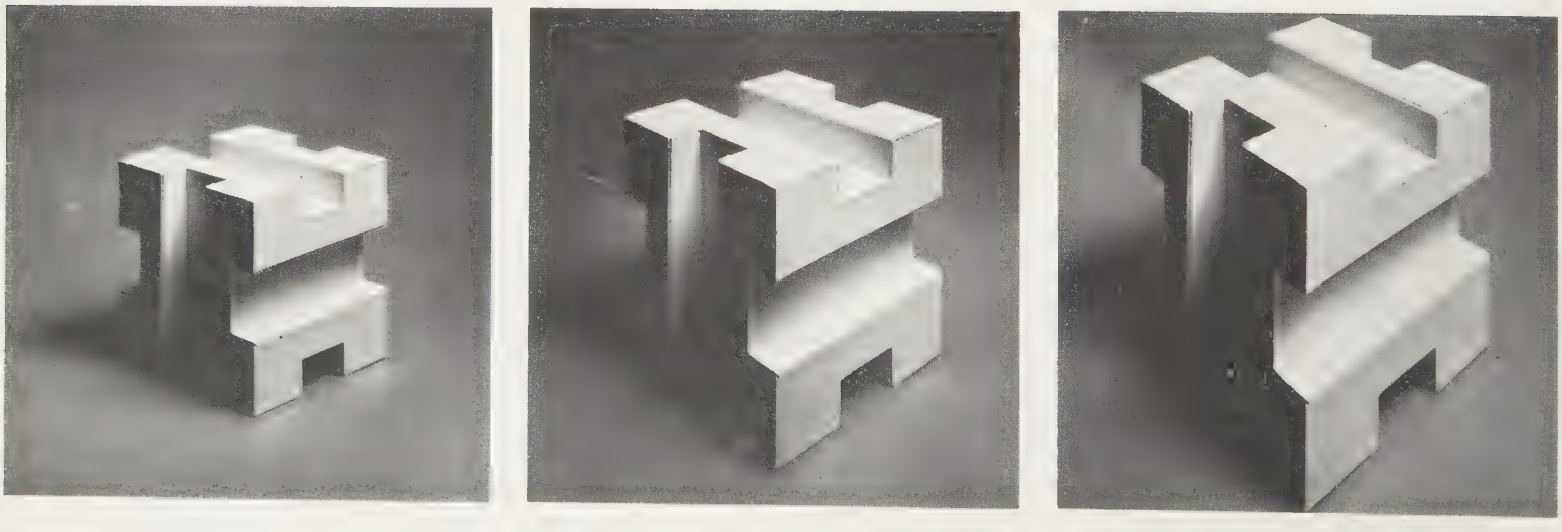


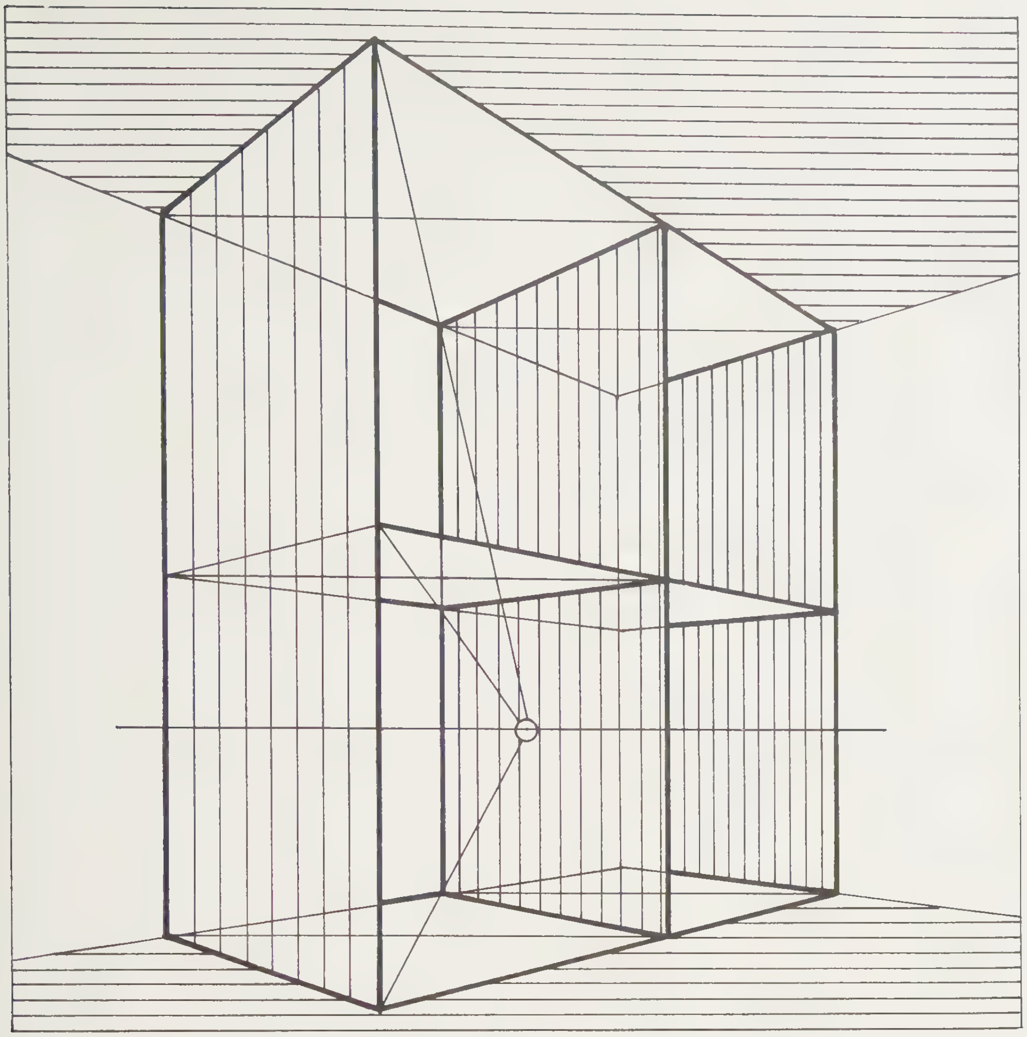
A visual inversion, a reversal from a convex to a concave illusion, can occur if you concentrate on this illustration of spatial corners. This effect would be significantly stronger in a parallel representation.

An over-the-corner representation of a ground plane turned at a 45° angle is shown here. The intersection of the object and the picture plane is different in this situation. The protruding sections are projected backwards on the plane, and the remaining penetrating points are drawn vertically downwards. Turning at equal angles to the picture plane, the deep diagonals have their vanishing point at eye point, while the frontal diagonals remain horizontal.

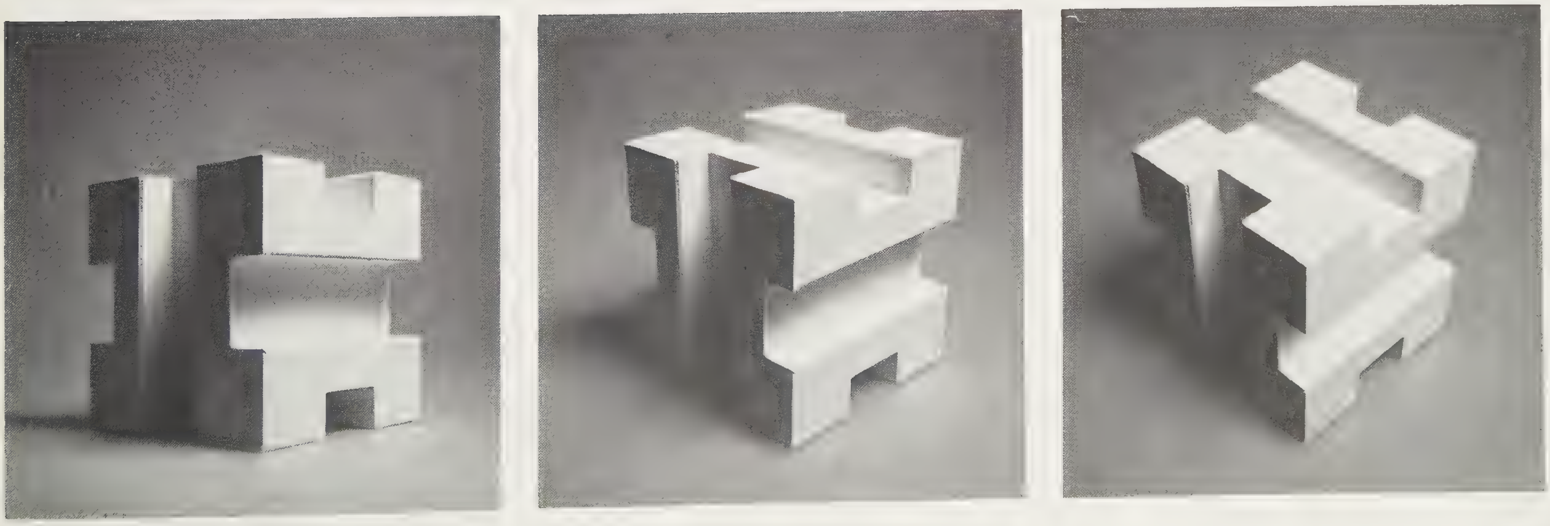


The drawings are compared with photography (central projection) to see the relationship. The photographs below left were taken with telephoto, normal, and wide-angle lenses. Converging lines were corrected. The photographs on the right were taken with a normal lens at the same distance from the object and with different horizon heights. Converging lines (three-point perspective) were not corrected.

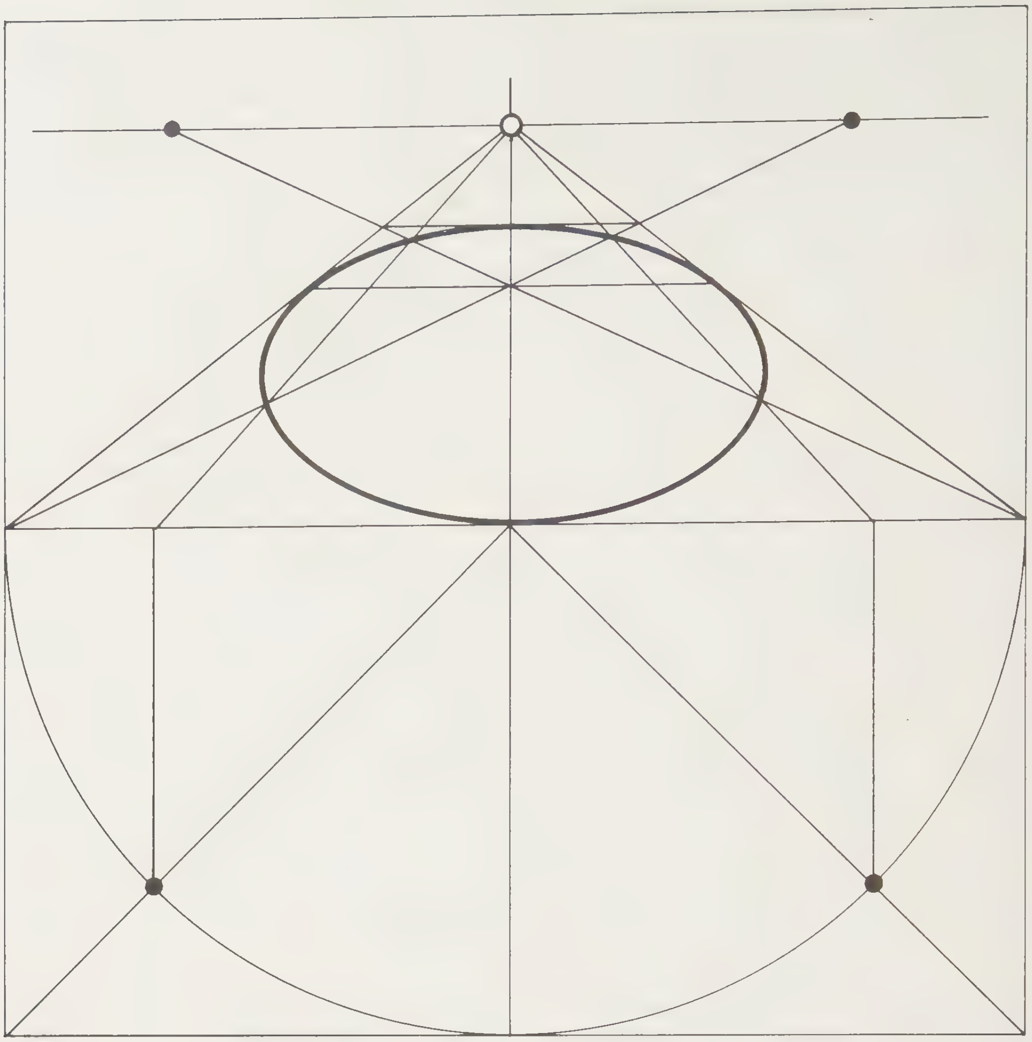




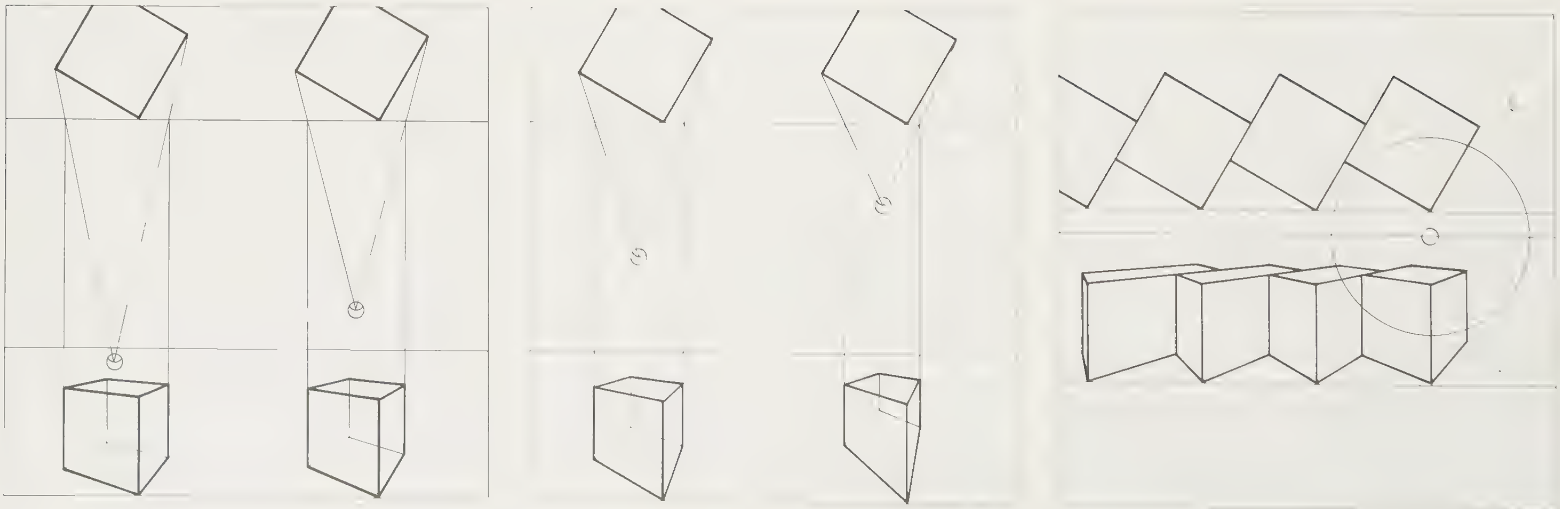
The perspective from the preceding illustration is enlarged with a linear grid. The volumetric grid can be enlarged on all sides by inserting more volumetric units and additional diagonals. Fine divisions can be added, such as tetrahedrons, octahedrons, and icosahedrons, which are mutually limited through congruent, regular polygons.

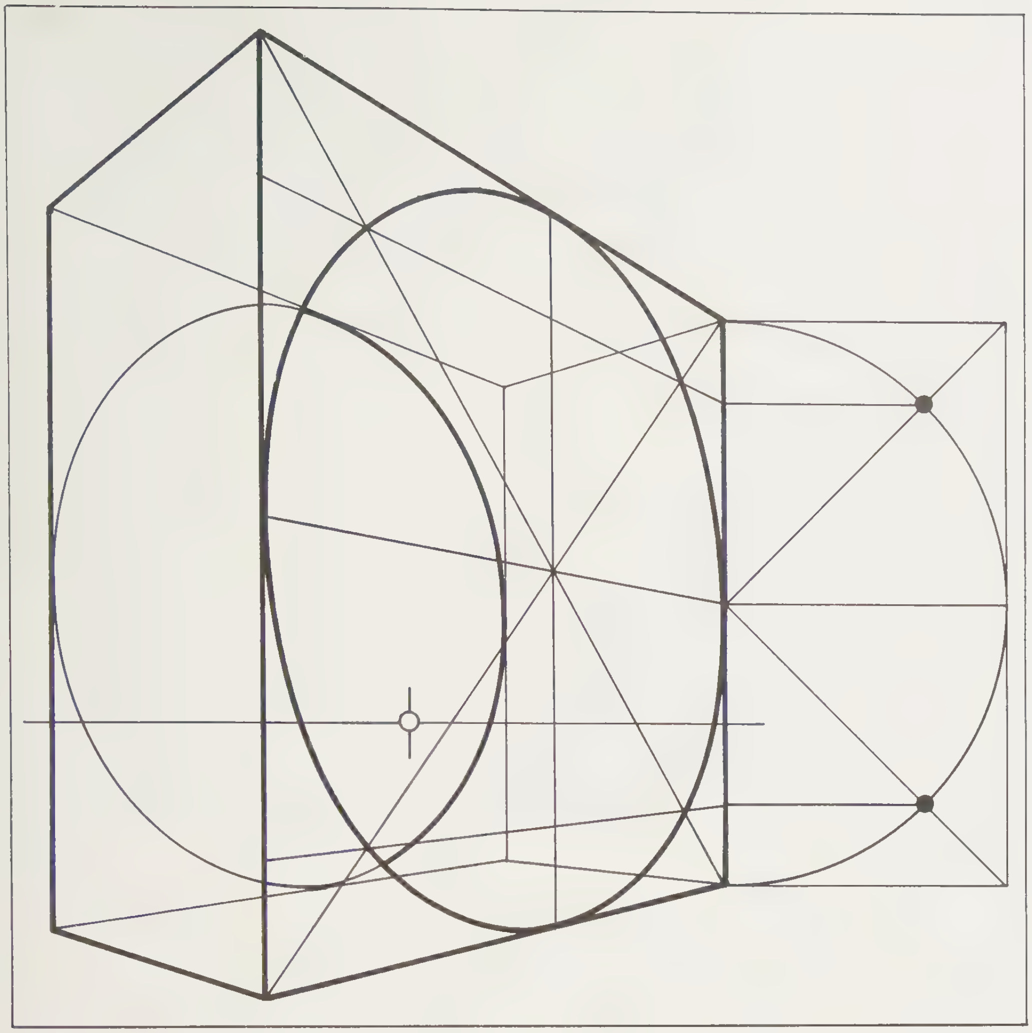


As with the frontal representation, the circle is represented as a circle only if the axis of the visible cone is perpendicular to the picture plane. The ellipse is the most common circular cross section. In the drawing the diagonal points are arbitrarily used to construct the circumscribed perspective square. Only a quarter of a circle is necessary to draw the proportions of the angles to the ground plane and to the eye point.

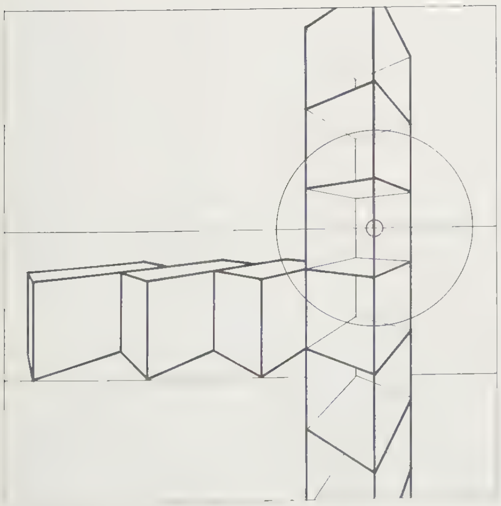


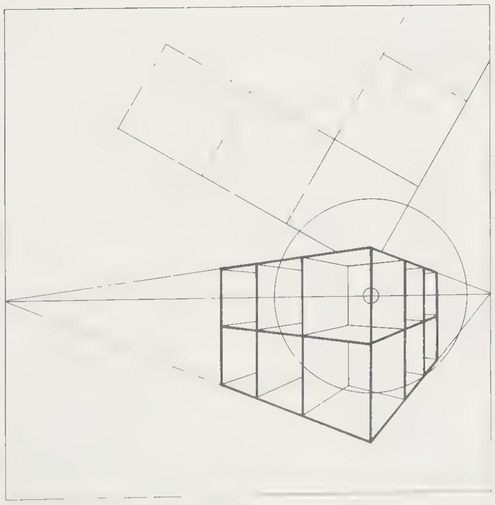
The six illustrations below show, from left to right, two examples of regular change of distance, as compared to the photographs on the two preceding pages; distortion of cubes that lie outside the human cone of vision (50° angle); the same situation with vertical distortions. In the two preceding examples the same cube is supplemented with additional cubes in depth. The enlarged illustration shows circles of vision corresponding to the angle of vision, 50° and 75°, respectively. Only the upper right part lies in the normal field of vision.

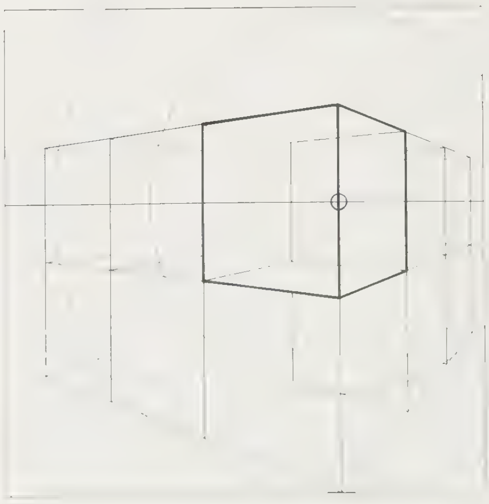




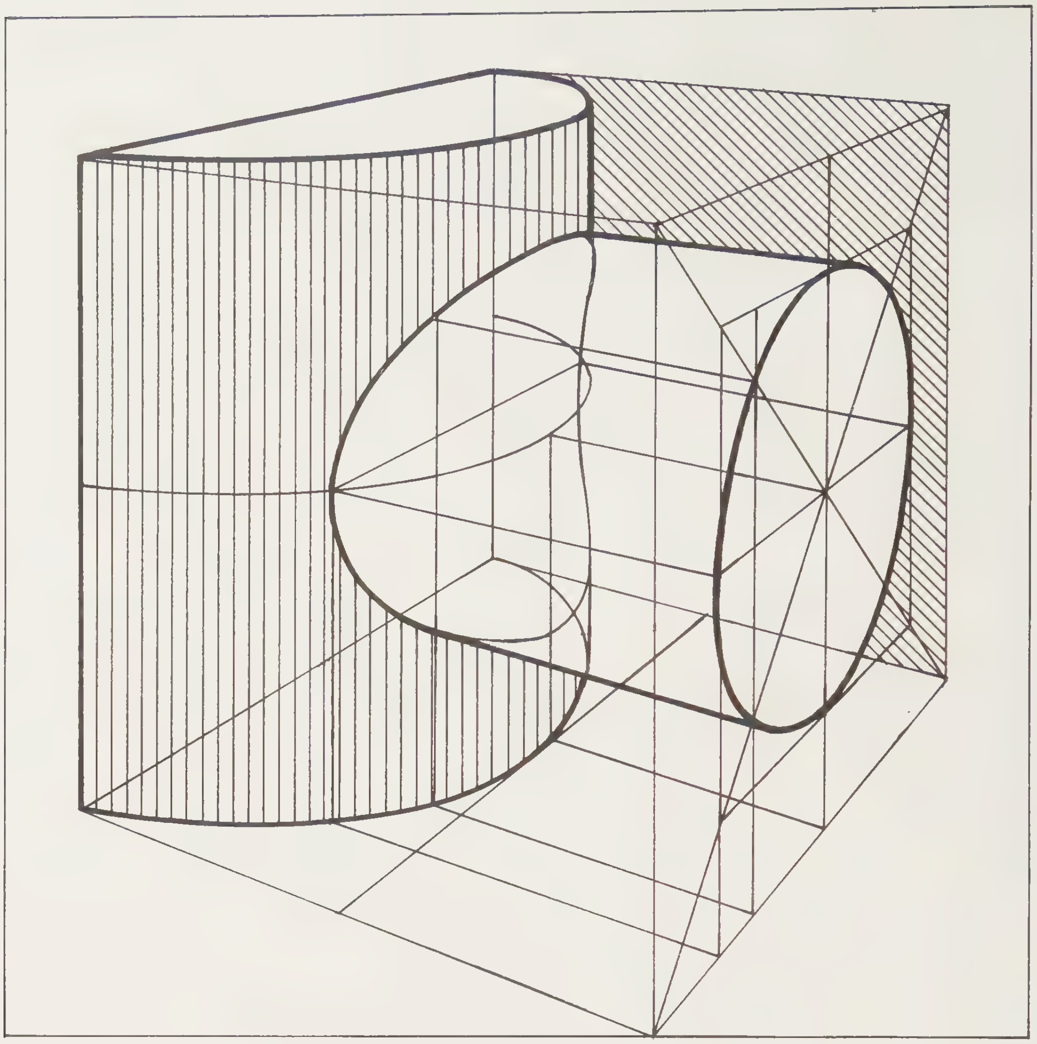
The diagonals produce the perspective center in the ellipse and the four tangent points. The largest diameter of the ellipse would be formed by inserting tangential rays of vision on the circle in the ground plane. The four additional tangent points through both ellipse axes simplify the construction of the curve. In the over-the-corner representation the frontal circle can be drawn at every optional vertical, because the proportions of the angles remain the same.



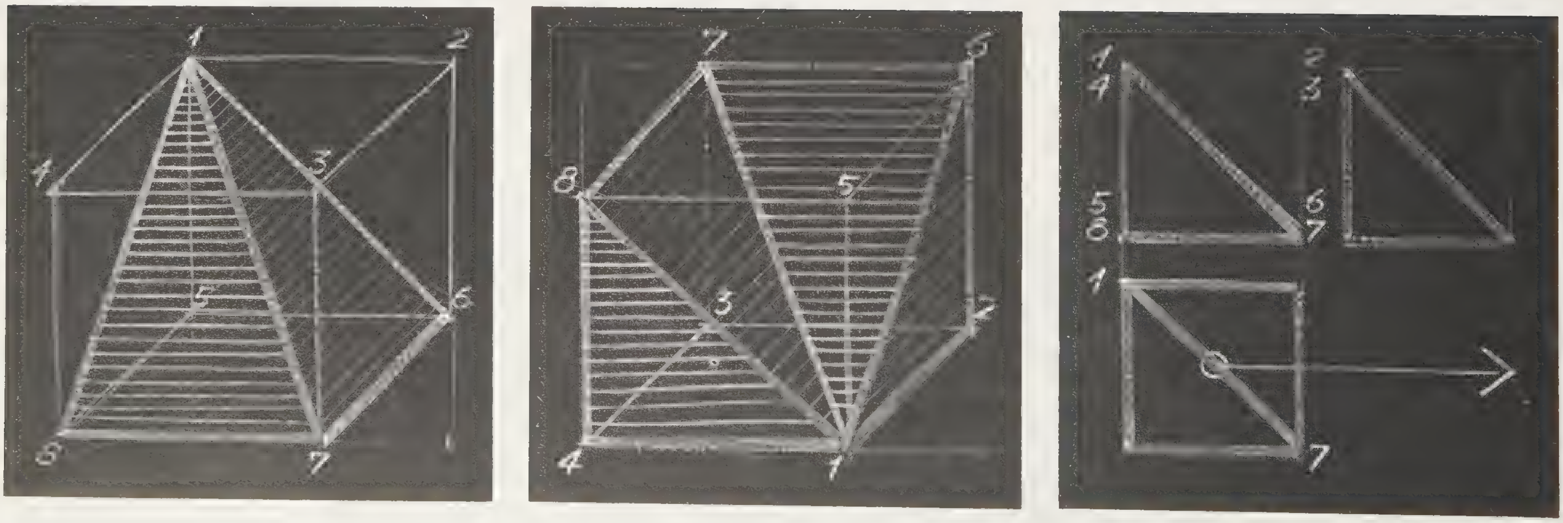


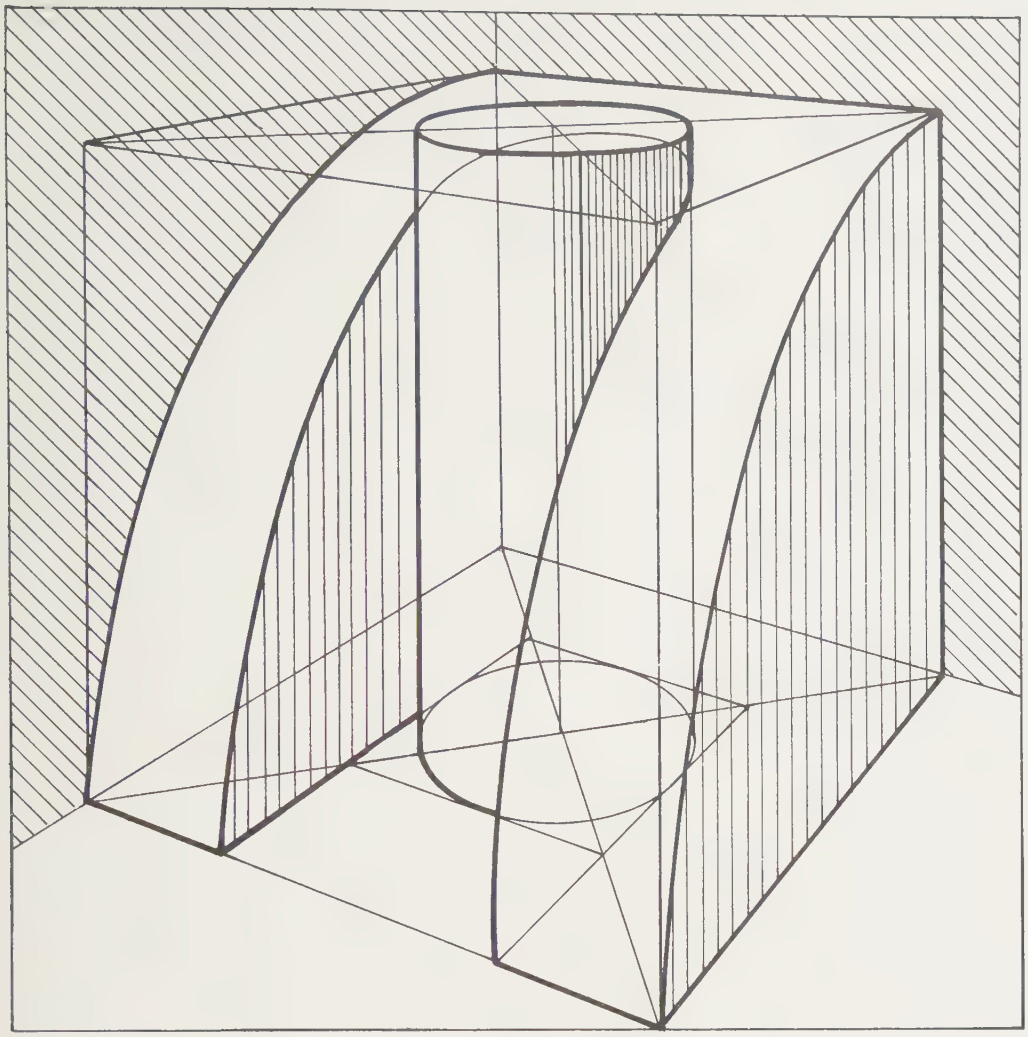


In this penetration the axes of the cylinder and half cylinder intersect at right angles. The solved perspective problem from the geometric representation, which is normally drawn in one- or two-part projection, is clearer to the observer. The curve of the intersection, the border line of the saddle surface, is found by inserting a perspective ground plane. The angle points of the cylinder drawn to the ground surface are projected to the standing surface of the half cylinder and extended up to the intersection with the convex surface lines.

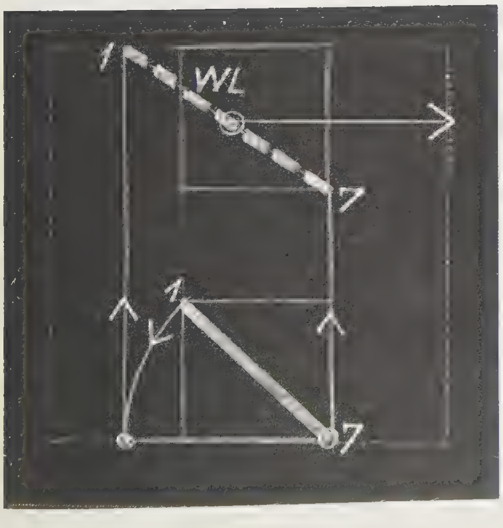


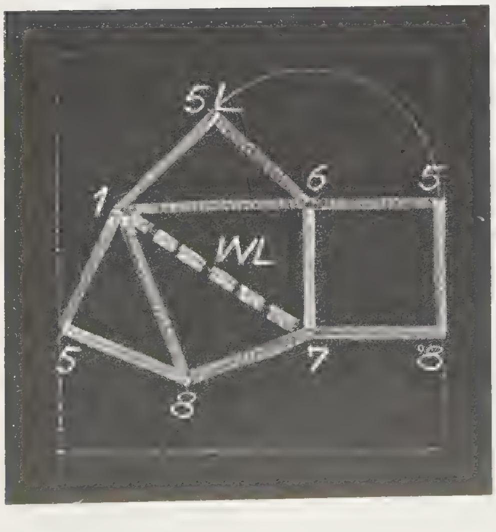
The six drawings on the blackboard show an oblique pyramid, a complementary cube, three-plane projection, the determination of the actual size from the straight lines, and the removal of both convex surfaces. The entire process is more understandable to students if they prepare a model of the object or insert straight lines and planes in an existing linear cube.

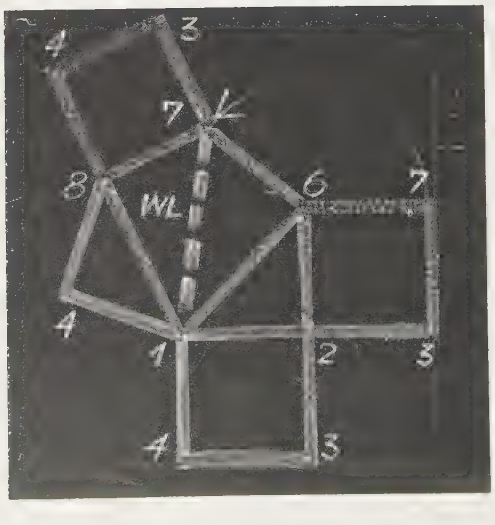


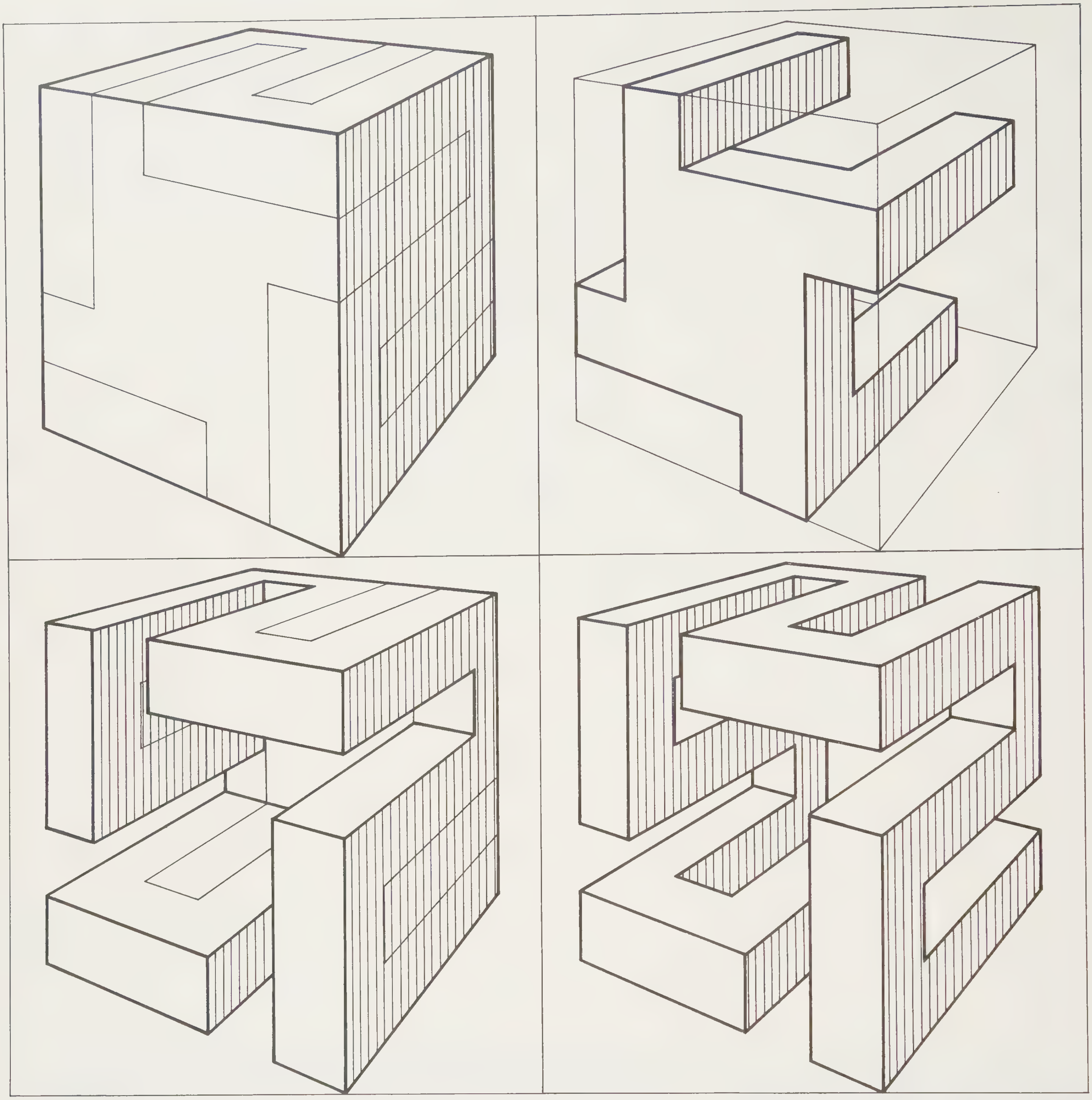


The cylinder is enclosed with a quarter circle-cube. It lies in the same over-the-corner representation as in the preceding drawing. Each quarter ellipse has another axial relationship and would approach a more circular form by extending the construction to the left vanishing point (without theoretically reaching it). The enclosing curve is seen as a half ellipse (circle) at the base and as a broken axial ellipse at the top.









The perspective of the over-the-corner dimensional grid is taken from a previously drawn model. The illustration shows a spatial meander that forms the original cube from two identical insertable forms. More complicated combinations are produced by connecting spatial diagonals.

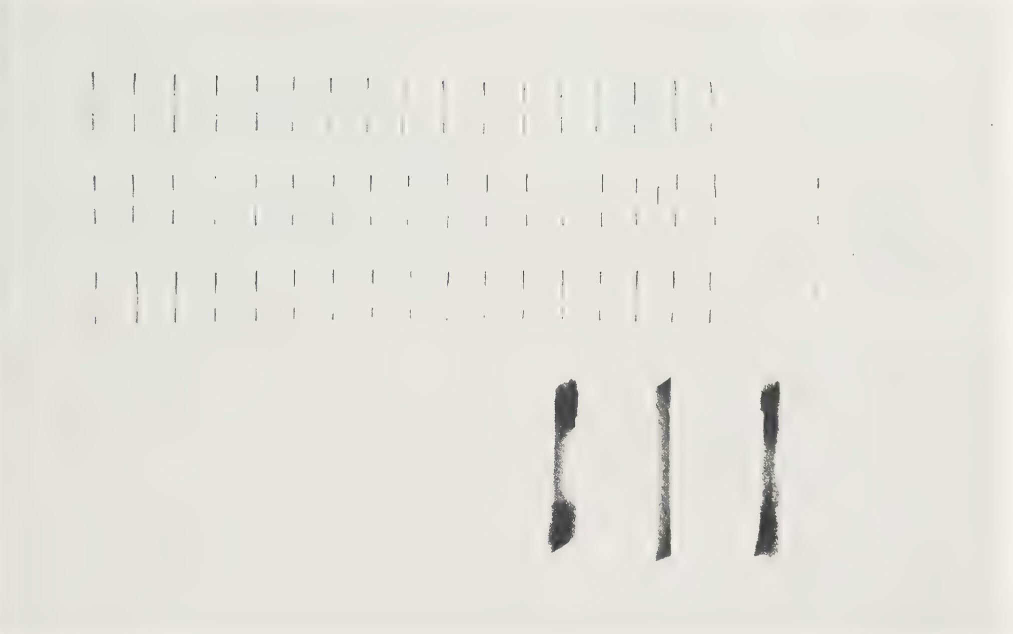
Lettering is the visualization of linguistic sounds by means of graphic symbols. The symbols have changed often during the course of civilization: their function as part of a graphic-communication system, their readability, and their aesthetic form are creative problems. The optical problem of readability involves the interdependence of the individual symbols and the harmonious sequence of the letters in a text, which together form the foundation of letterform education.

Graphic formulation, rhythm, and composition are achieved through systematically structured, elementary exercises using letterforms on a given writing surface. They demand concentration and manual discipline. Through constant exercise the students become aware of the formal and technical abilities required to solve complex letter problems. The appearance and formal unity of letterforms are determined by the interrelationships among basic forms of individual characters and spaces between characters and by the continuous, rhythmic properties of the strokes and the writing materials. Different exercises explore pencil, charcoal, and pen-and-ink on unruled paper. The course is organized in terms of the following interrelated disciplines: stroke and character composition, from individual strokes to nonletter symbols; elementary capital letters; and curved elements, which should exhibit the same characteristic form and correspond to fixed proportions.

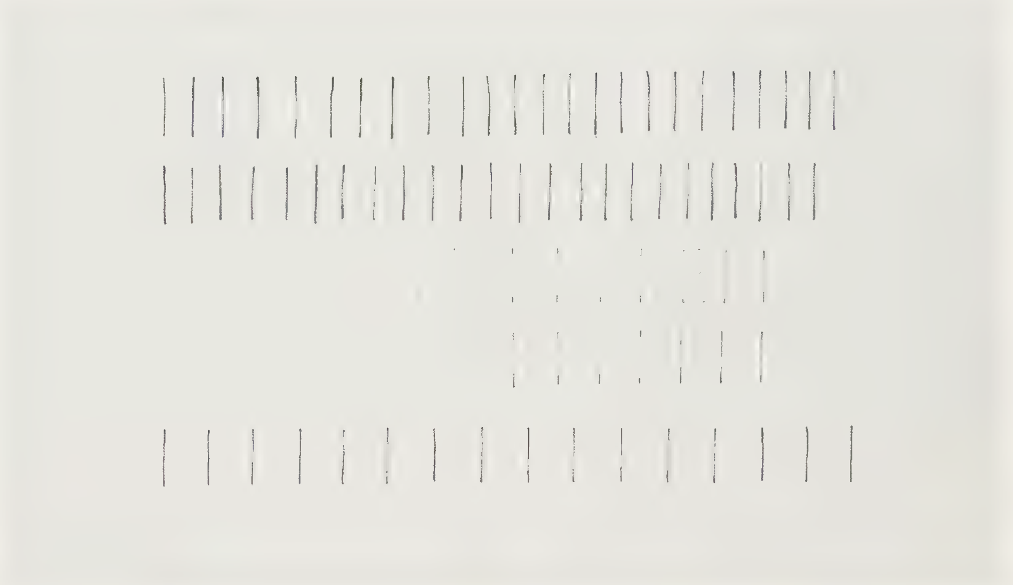
The exercises are expanded by changing the writing tool from pencil to pen. Different angle positions of the pen produced variations in the relationship between vertical and horizontal strokes. Bold sketching of individual characters is encouraged. Forms and properties of letters are developed through continual redrawing. The ability to write minuscule letters results from gained knowledge. Lettering is not simply copying historical patterns or even creating beautiful calligraphy.

In addition to the practical exercises lectures are given on the present aspects and historical development of the Latin alphabet. The students also receive an insight into other writing systems.

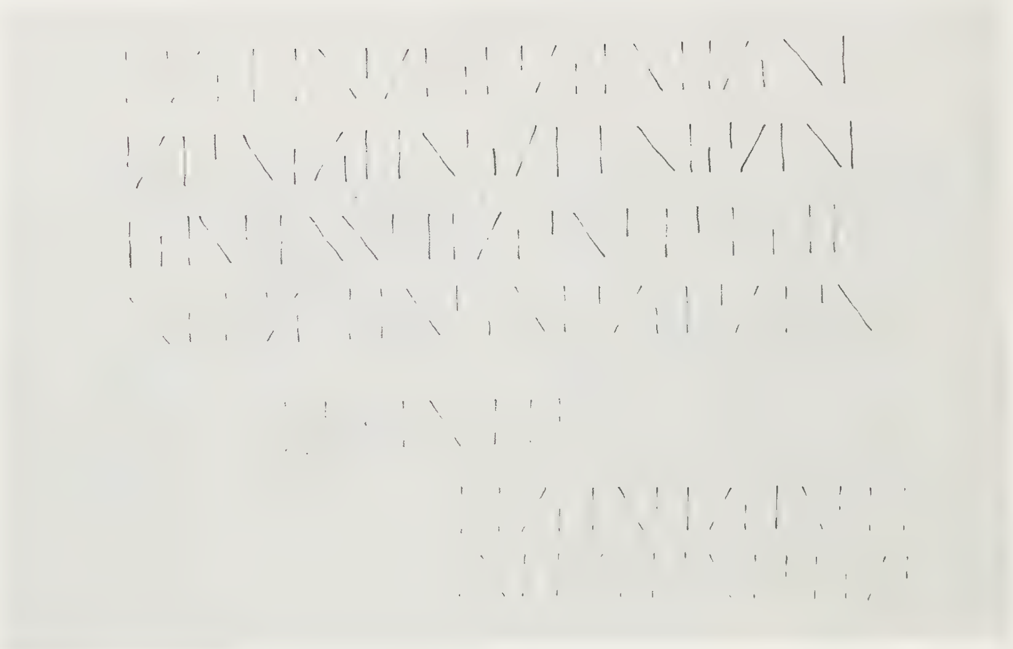
Forming the strokes and arranging them evenly form the basis of the lettering exercises. The stroke, both an independent form and part of a letterform character, must be lively and exciting. Accentuating the ends makes its form more distinct. The accent is produced by means of stronger pressure on the writing instrument. Abrupt increases or decreases of pressure should be avoided. Pressure and counterpressure must flow homogeneously into one another. A formal unity of word and line structure and a rhythmically balanced organization of the entire page are produced through the optical equality of interior and exterior spaces between characters and line intervals. The basic interval between two verticals is the starting point of the optical adjustment. The interval is somewhat smaller than a square. Additional spaces produced with diagonals or half verticals must be optically equal to the basic interval. Individual lines are written freely on the page, which makes the optical-organization process more direct, intensive, and intuitive. It should not be influenced by helping lines.

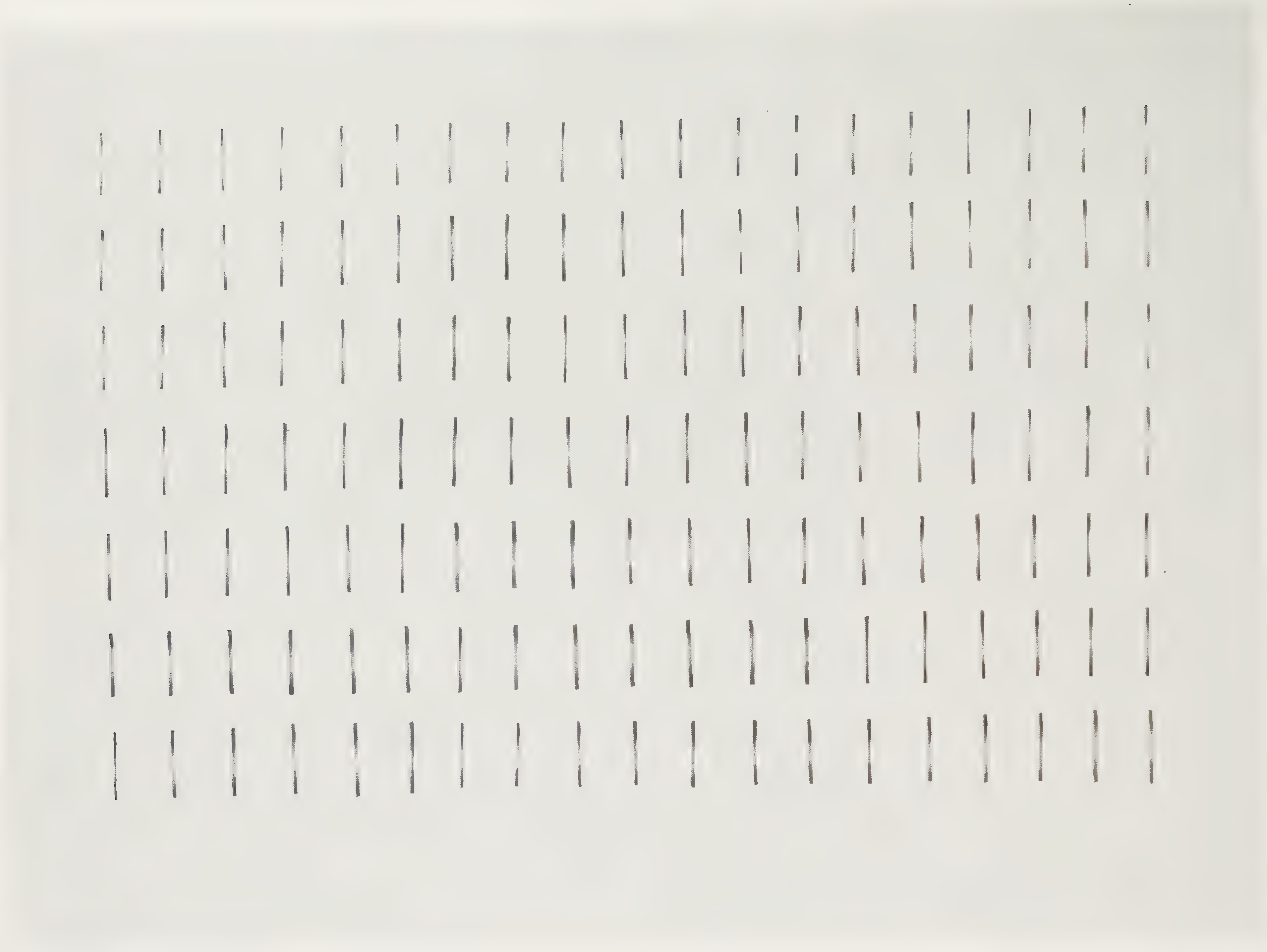


The exercises are written consecutively from left to right. The pencil must not be too soft: immediate wear produces a broad, awkward stroke. A hard pencil, on the other hand, impedes clear modulation and straightness of the stroke. The paper should not have a coarse texture, or the line will dissolve and lose its consistency. Corrections are made without erasing, and the exercise is repeated. In this way the student can compare and control the form.

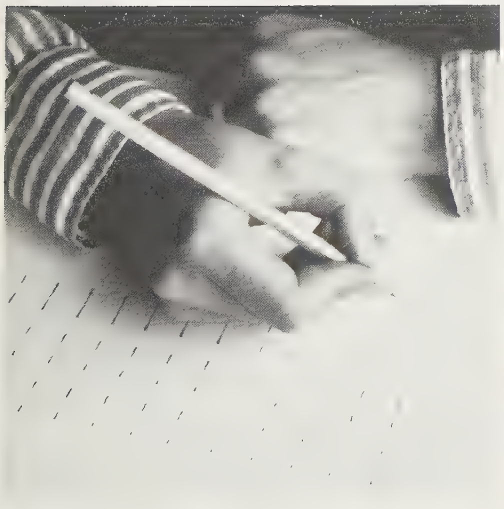


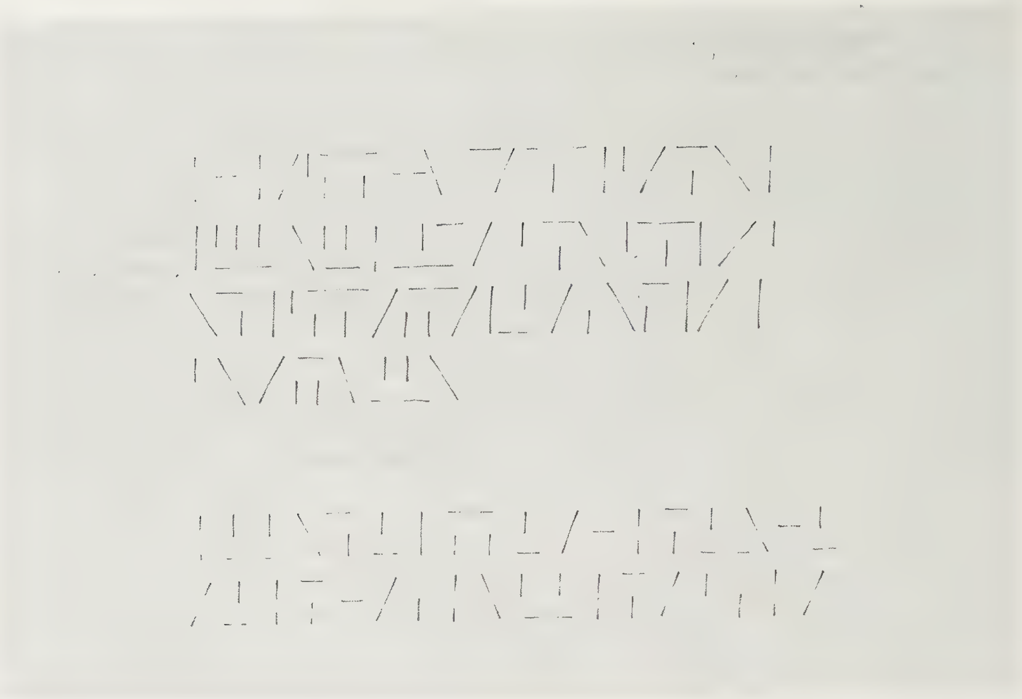
The small illustrations here and on the following pages show different problem situations and appropriate explanations or corrections. The large illustrations document the solutions.

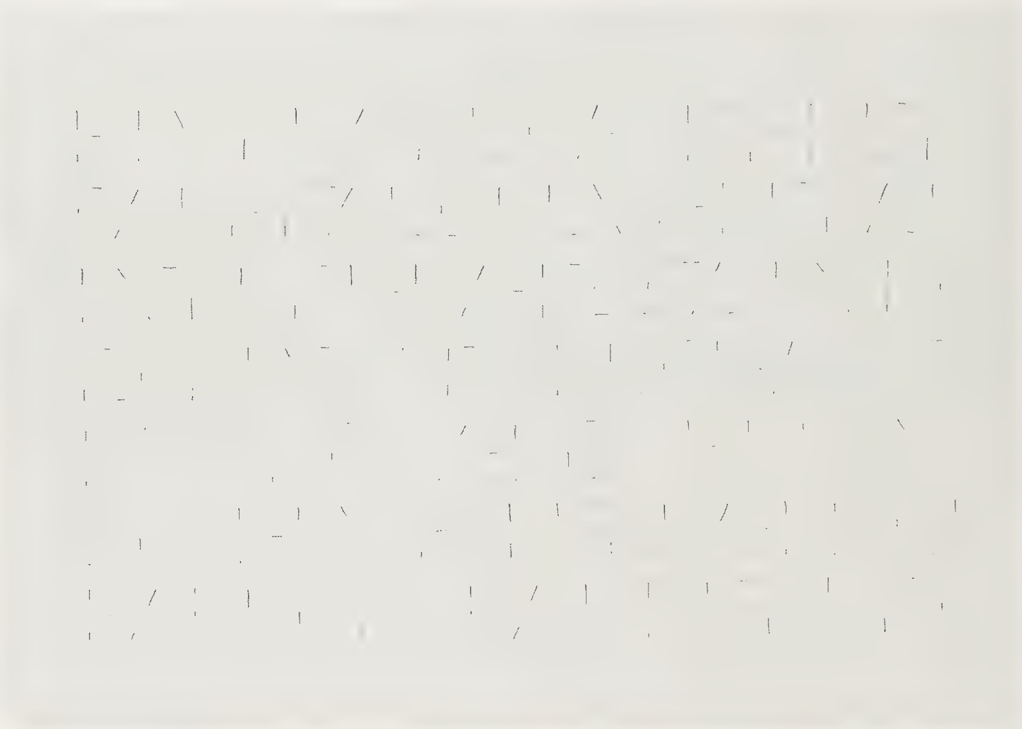


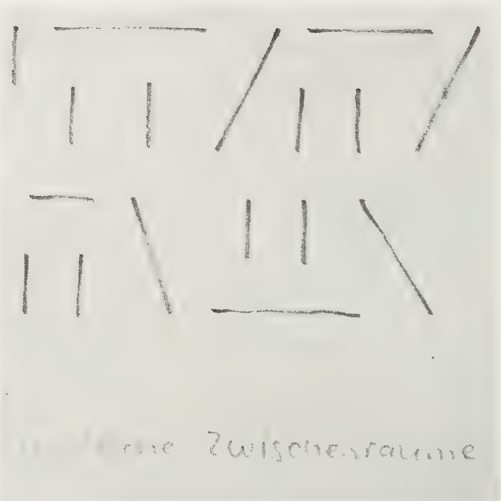


These photographs show individual writing positions. Students are not forced to use a particular hand position.



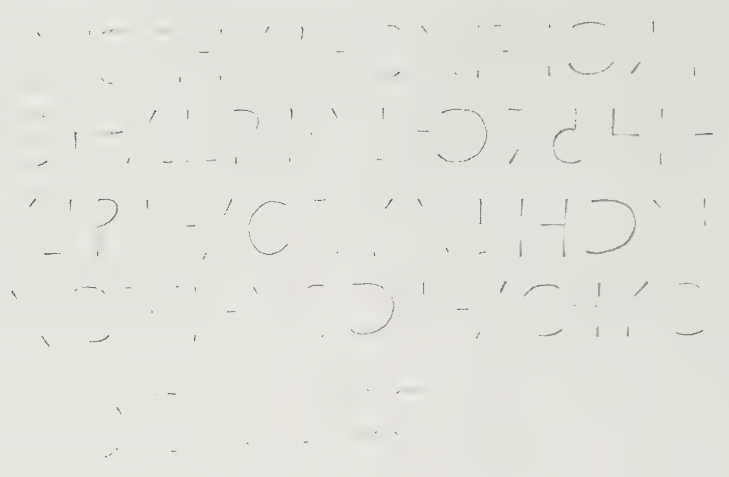





Zwischenraume

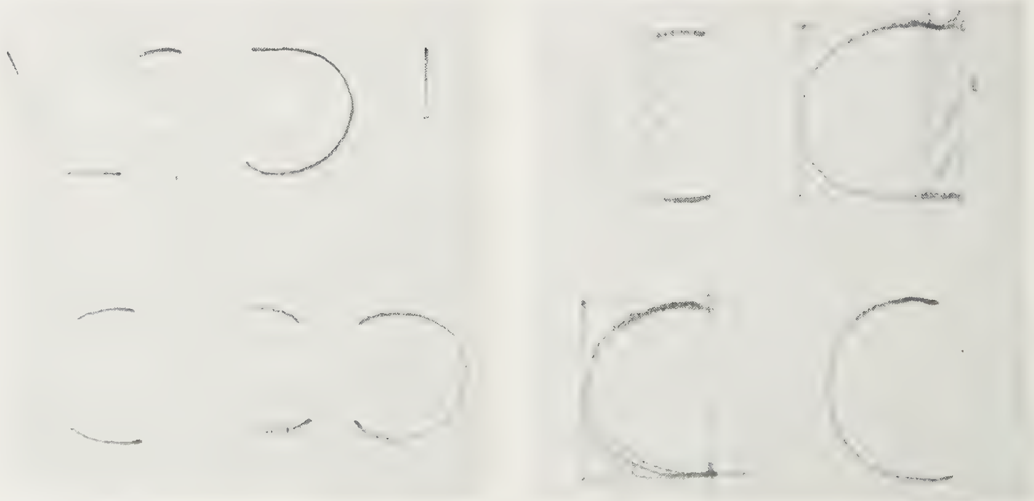
The exercises include half and whole horizontal-stroke elements. In addition to stroke quality and optically equalized spacing the student must simultaneously pay attention to the uniform, quantitative distribution of given stroke elements. All the parts should form a balanced unity of quantity, organization, and rhythm.

The enlarged section from the illustration above left shows unrhythmic spacing. The spaces are optically unequal, and the standardized linear lengths vary.

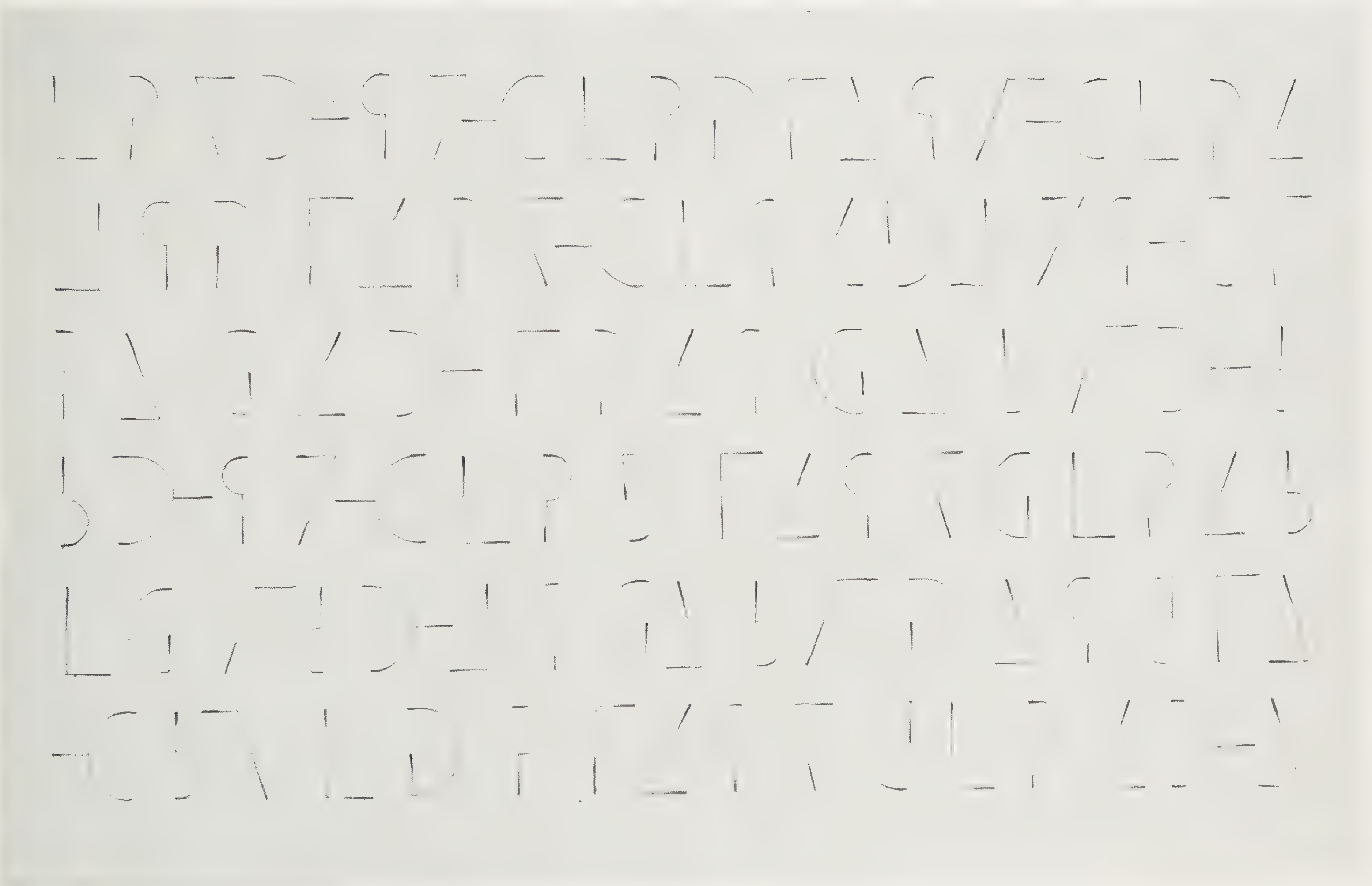


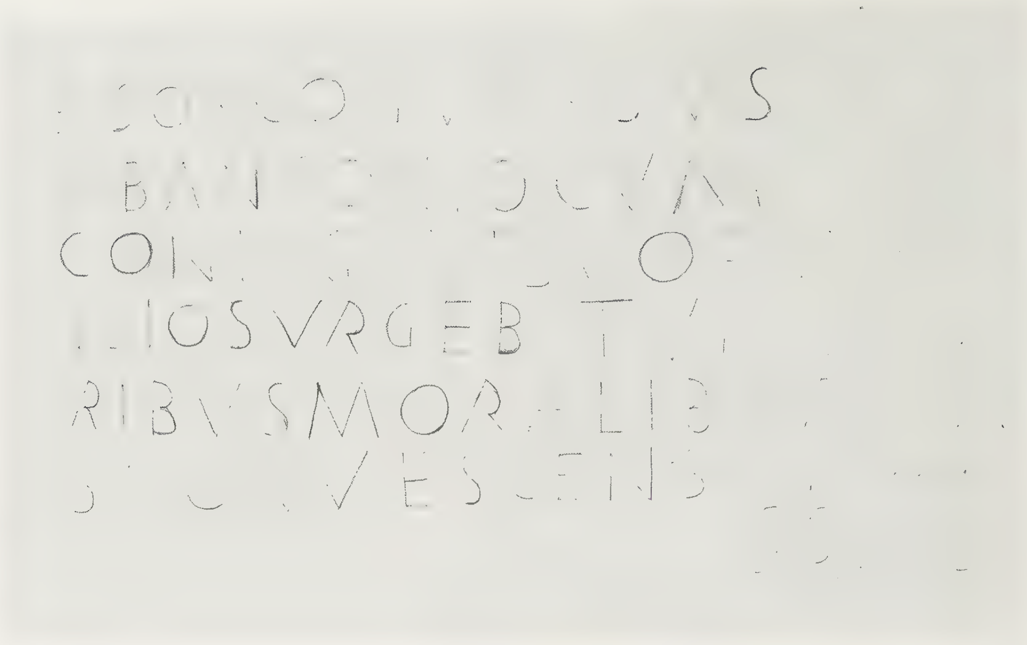
The curve is the final element in the basic exercises. Its clear, definite form essentially determines the characteristics of written capitals and round letters. The curve is fundamentally symmetrical and wider than the geometric half circle. The form should end either horizontally or slightly rounded.

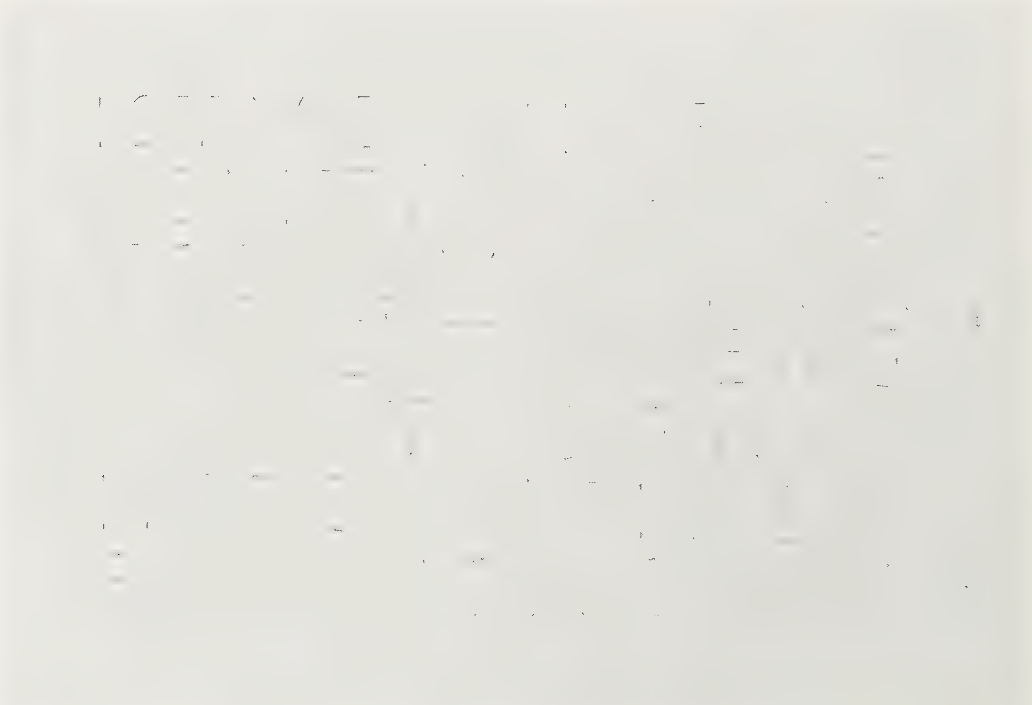
The enlarged sections show corrections of curve characteristics.

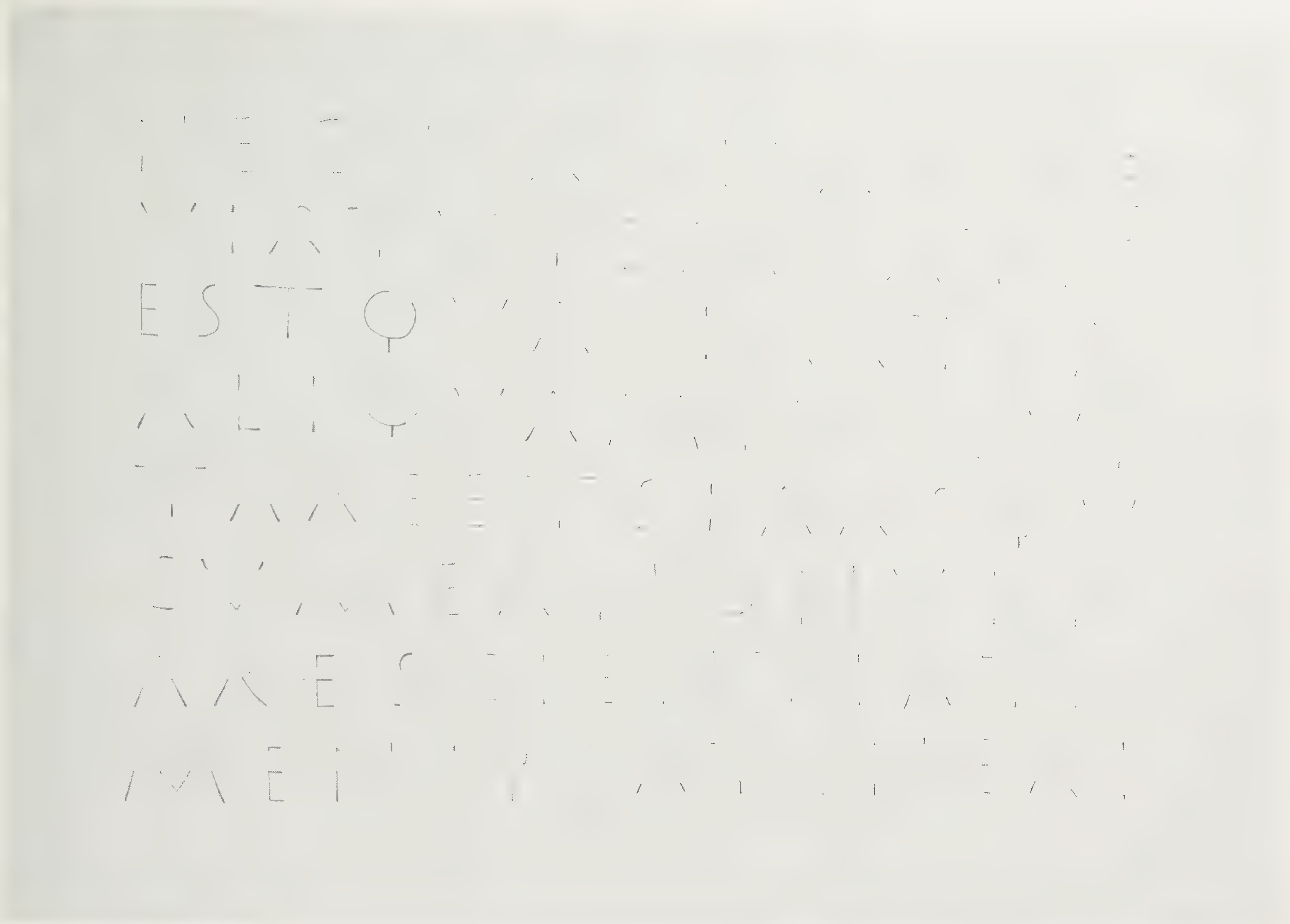


When the student is sure of his letter-building elements, symbols are organized into a composition. A predetermined number of elements is used. The structure of the forms should be simple: they should not contain more than three linear elements. The creative and inventive capacities of the students are stimulated through this exercise, which is a preliminary to actual letter writing. It summarizes the most important components of letter writing: technical discipline, concentration, understanding, and sensitivity to form, rhythm, and organization.





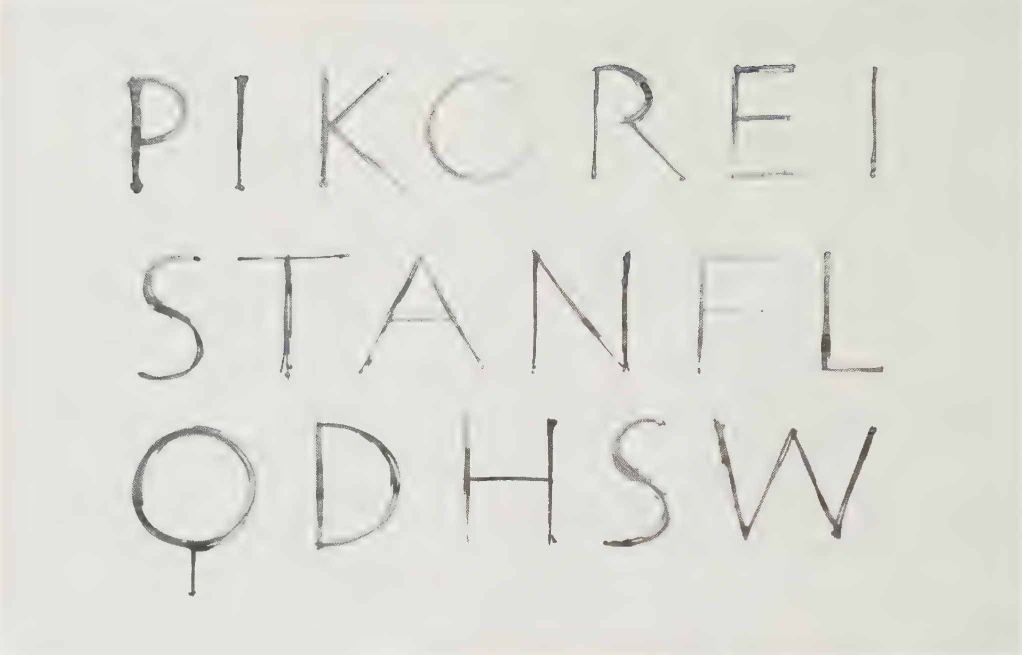


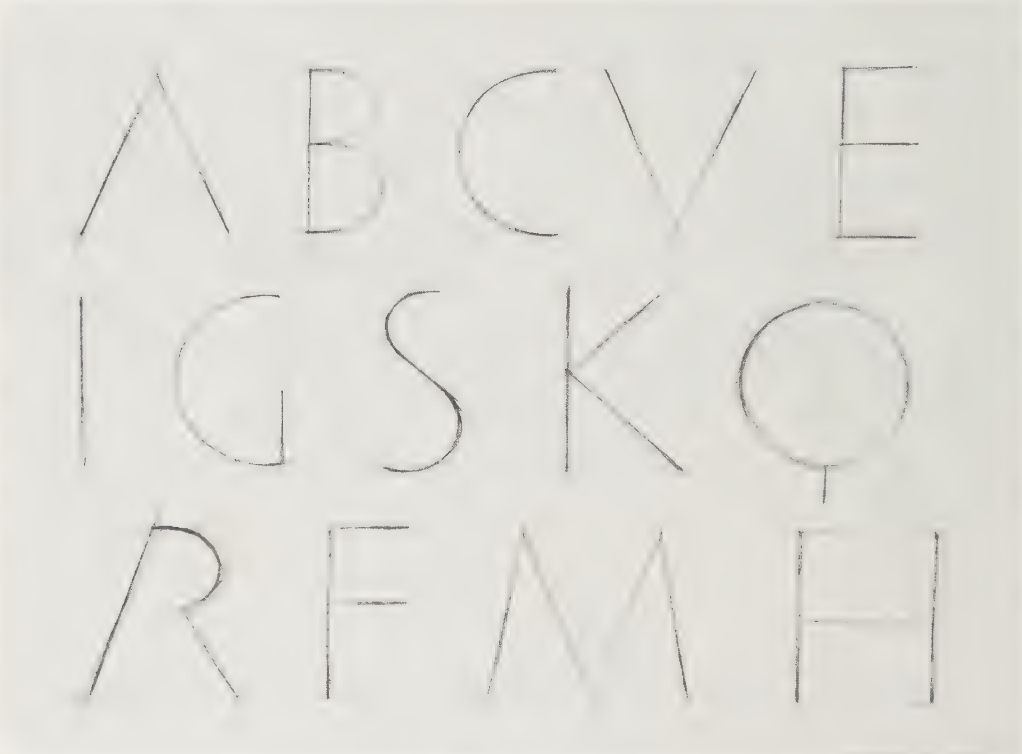


Following this necessary foundation the students concentrate on the formulation of alphabetic symbols. Transcribing a Latin text is a suitable introduction to capital letters. Intervals between words are not considered in order to concentrate on organizing the lettering surface. Experience from the preceding exercises is transferred to the letters. Proportions between and within the individual symbols must be recognized and used correctly, and the different forms must be arranged according to size and degree of openness in a clear optical relationship to the total composition: for example, the letter O is small because of its closed nature; the termination of the letter N ascends slightly to the right and is compensated for by its two pointed angles. Each student works from the same model, but personal texture is developed. Individual organization, form, and general appearance deviate slightly from one another without differing essentially from the standard model.

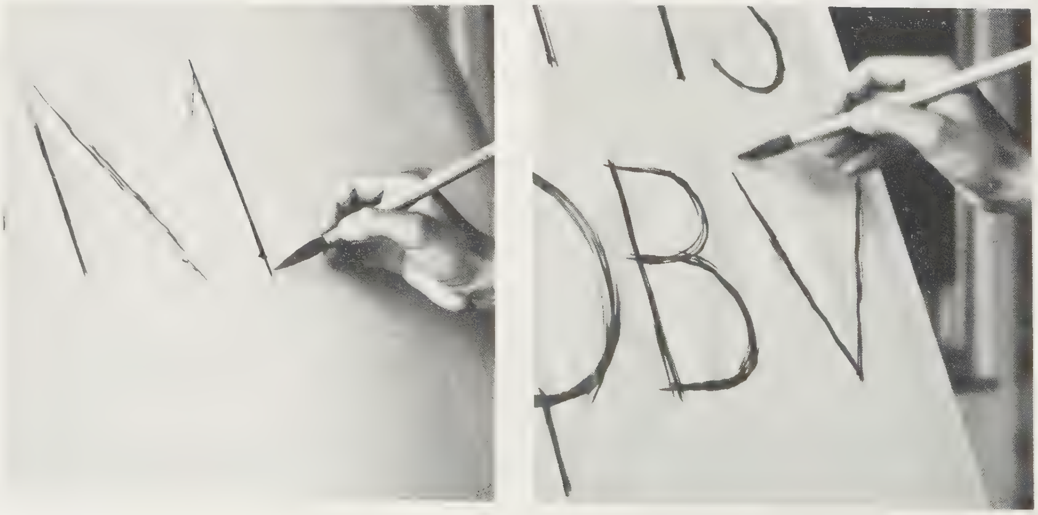
The enlarged sections show corrections of the forms and proportions of individual signs. The curve of the R, above right, should not be pulled down but slightly elevated. The vertical position of the S is produced by aligning the ending strokes vertically with the width of the letterform. The width of the curves in B and P, center, is very small. In the complete picture the forms appear narrow because of this incorrect proportioning. The vertical of the K, below, should be slightly longer than the normal character height. The starlike appearance of the form neutralizes its relatively long diagonals. The meeting point of the lines in the Y are just below the geometric center.

In the beginning of the exercise spontaneous, direct, correct writing of complicated letters (such as B, R, S) is difficult. In order to understand the essential characteristics of such forms, students sketch on large sheets of newsprint. Correct proportional construction and form are analyzed while practising in a free, sketching technique. The selection of writing utensils is left to the students: they can use a soft 6B pencil, brush and ink, lithographic crayon, or charcoal.

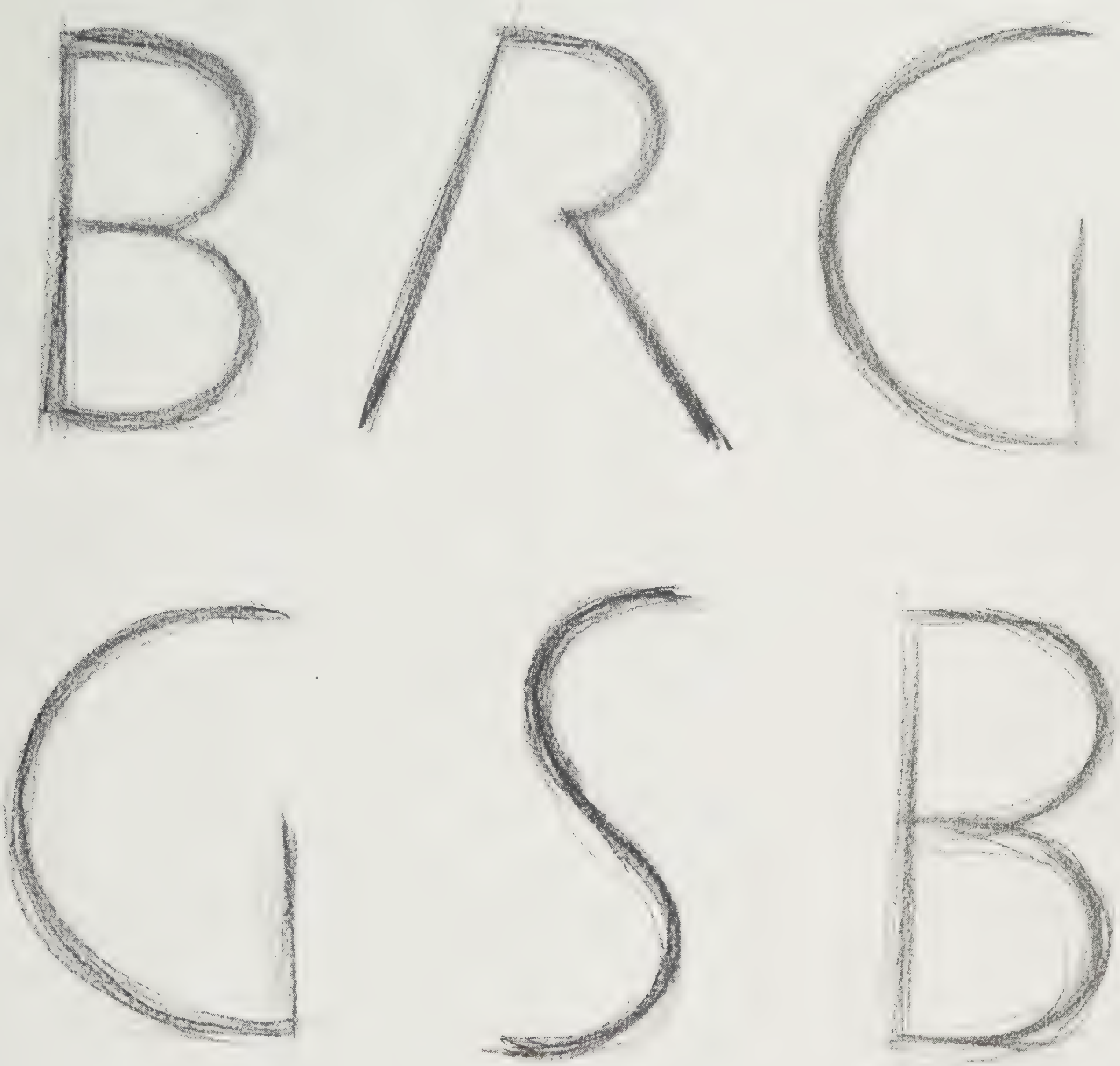


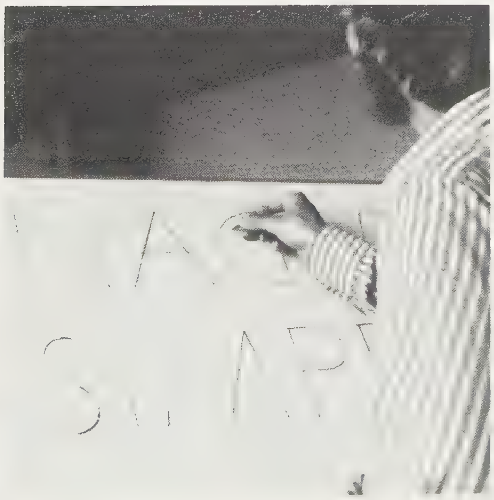


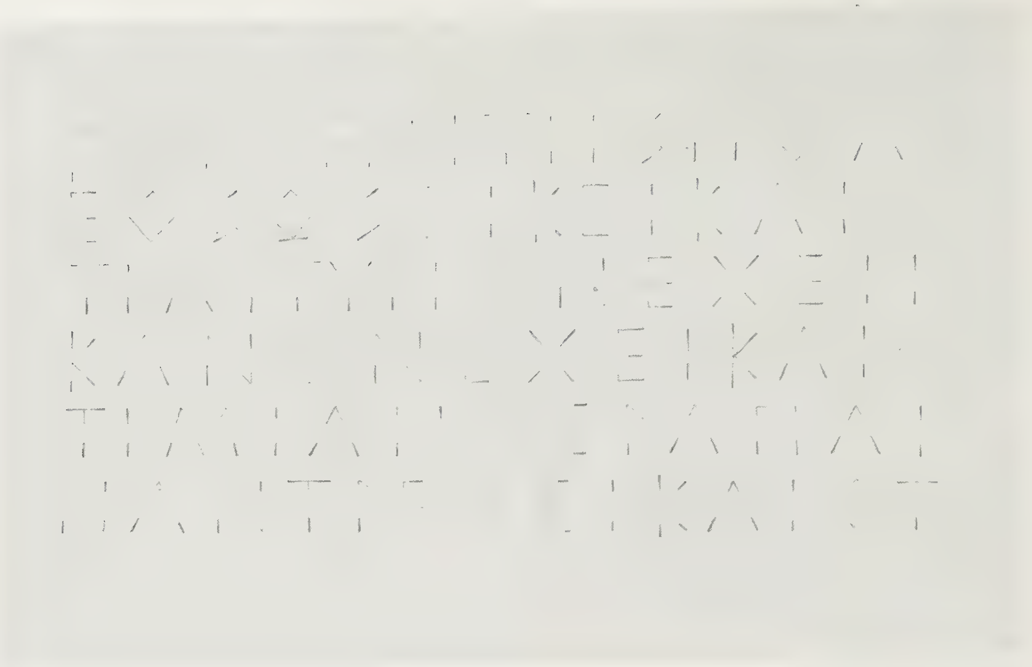
These three illustrations show examples of finished forms done in brush and ink, charcoal, and lithographic crayon.

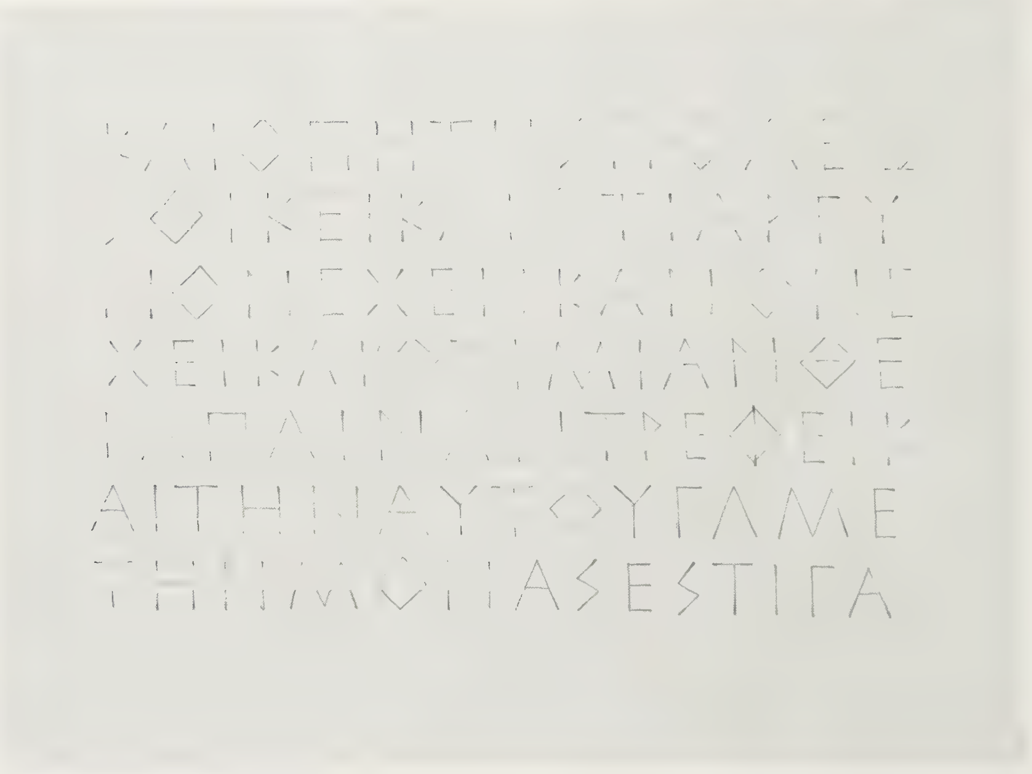


The following photographs show individual writing positions. A standing position allows a fluid, unhindered rhythm and a simultaneous observation of forms at a greater distance.


BRG
GSB

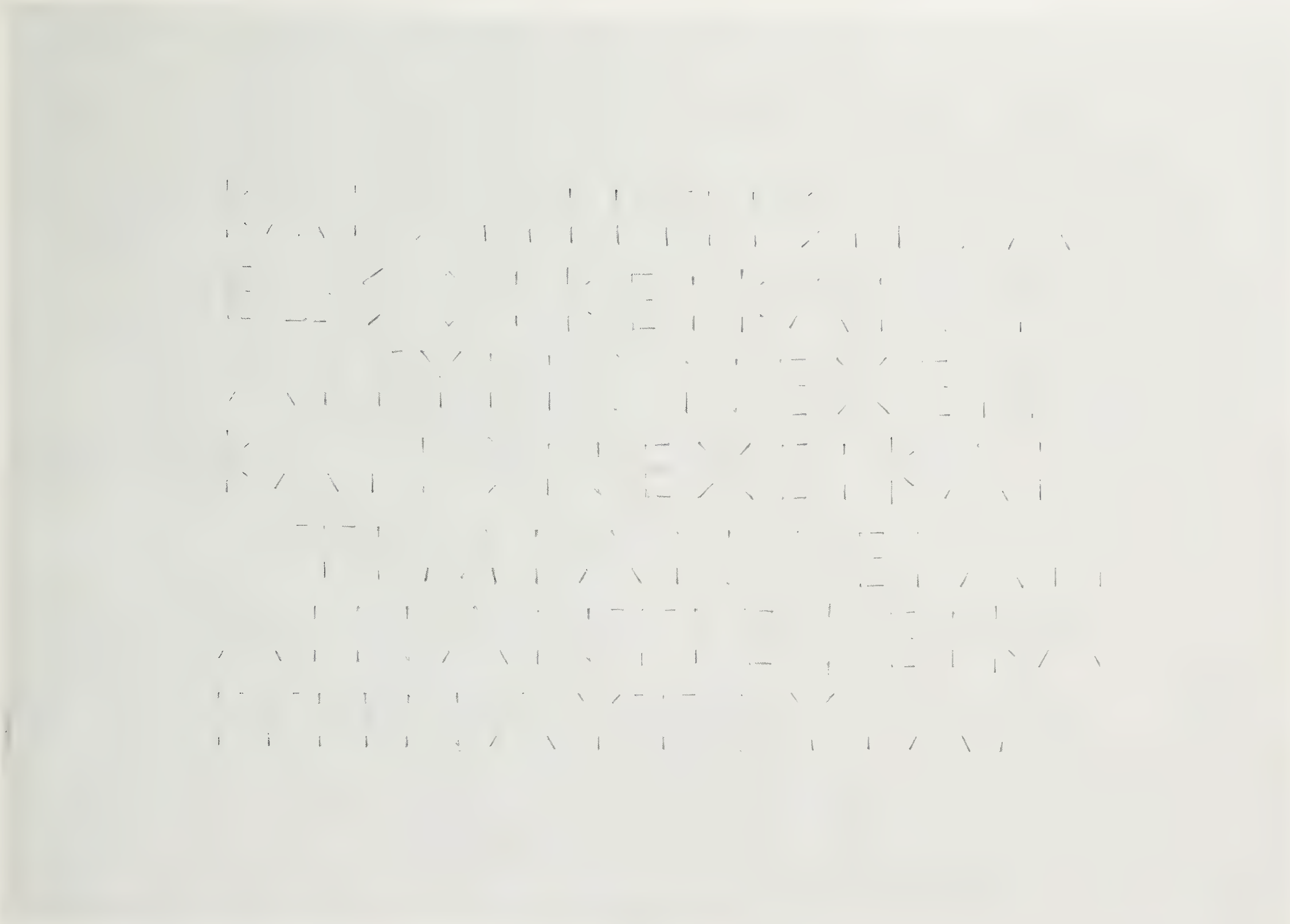






Writing a text involves clear organization and formulation of alphabetic characters within a linguistic context. The contents are initially irrelevant, so the exercise can be done with non-Latin alphabets such as Greek or Cyrillic. All of these alphabets have a similar formal basis, so the same principles can be applied.

In the lettering classroom questions and problems are discussed and explained in groups and individually.



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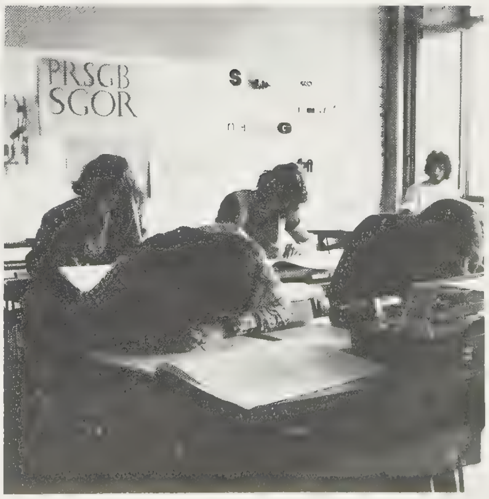
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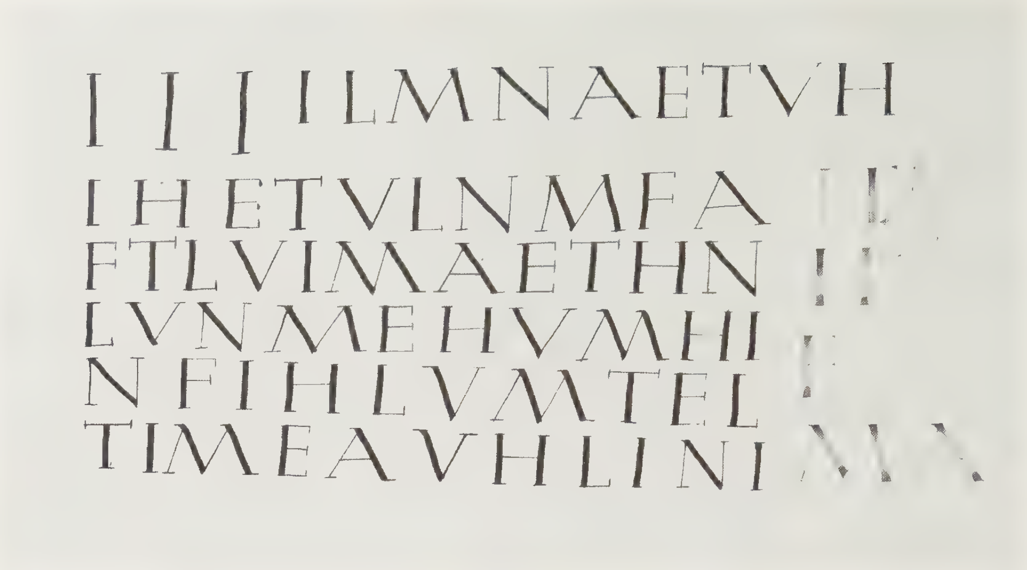
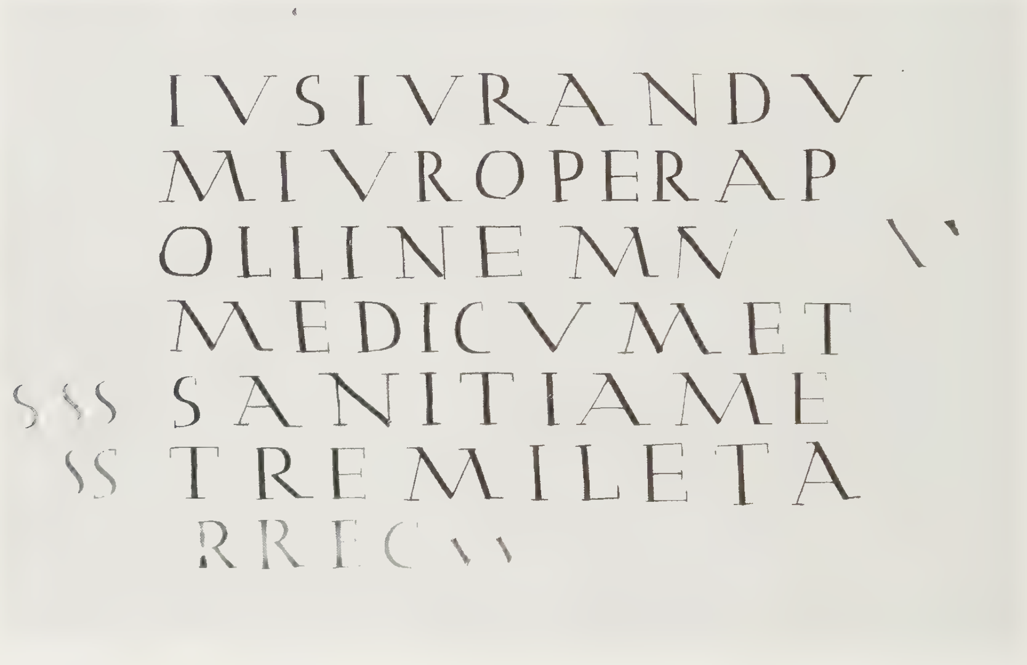
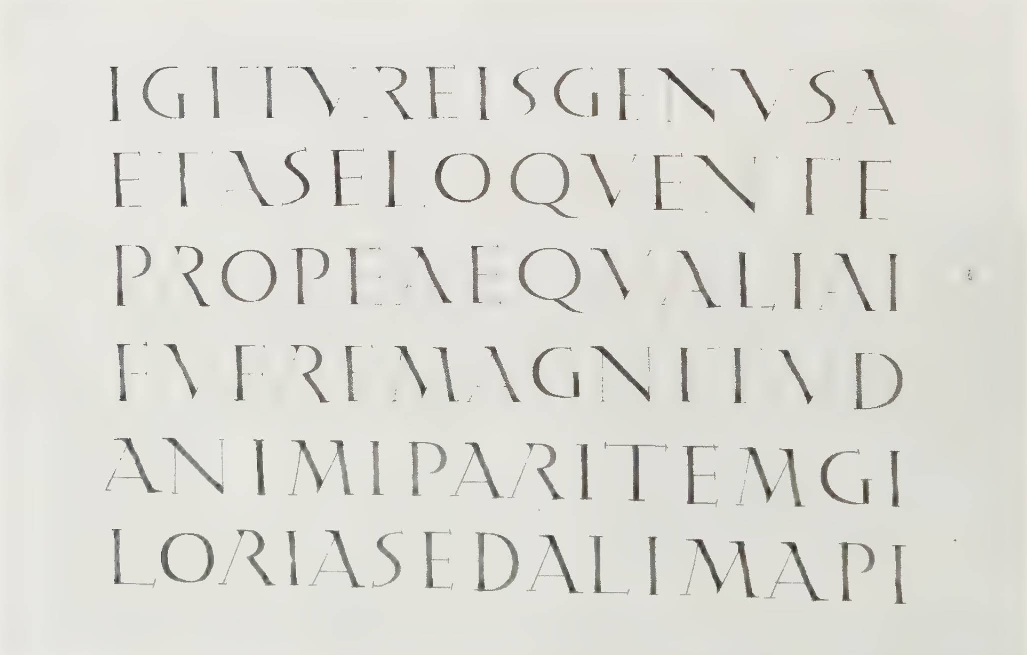
The lettering pen creates a completely different effect than pencil. The contrasting rhythm of thick and thin line segments within the individual letters produces a dynamic quality, and students can clearly experience the direct influence of the tool on the lettering form. The lettering pen also allows exploration of the calligraphic aspects of the Latin alphabet. The exercise is produced with a Soennecken-pen No. 2 or the English Mitchell-Roundhand No. 1$^{1}/_{2}$. Black ink ist mixed equally with water to obtain a lighter line. A color relationship between the writing and the surface is produced by using absorbent, yellow-toned paper. In general, Ingre paper is suitable for writing with pen and ink.

The pen is held in a fixed position so that the writing edge of the oblique-cut point is absolutely horizontal. This allows the greatest possible line contrast. Applying pressure on the writing tool is essential to the creation of thick vertical and diagonal strokes. With pressure the line becomes thicker because of the spreadable pen nib. A uniform change of pressure modulates the stroke. The student learns the principles of structure and regularity for the Roman letterforms, which exhibit strong contrasts of stroke thickness and modulation of individual thick strokes.





In the two above examples line modulation and letter formation, especially the S, are schematically explained.



The following photographs show the different pen positions for writing the M.

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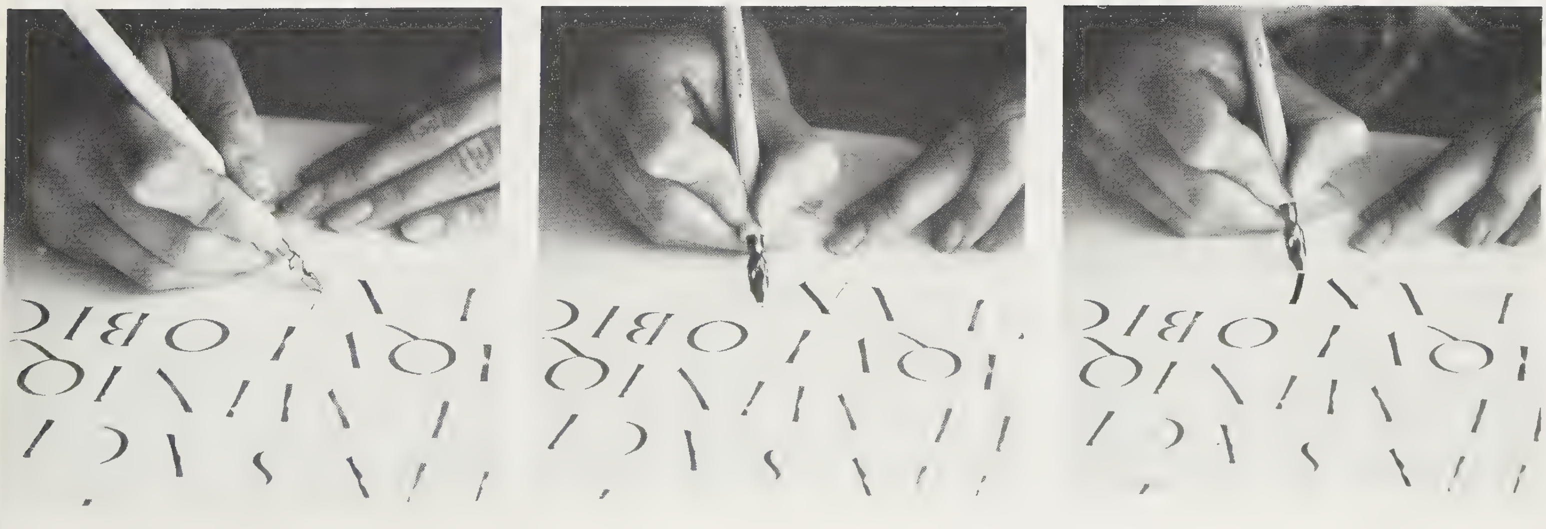
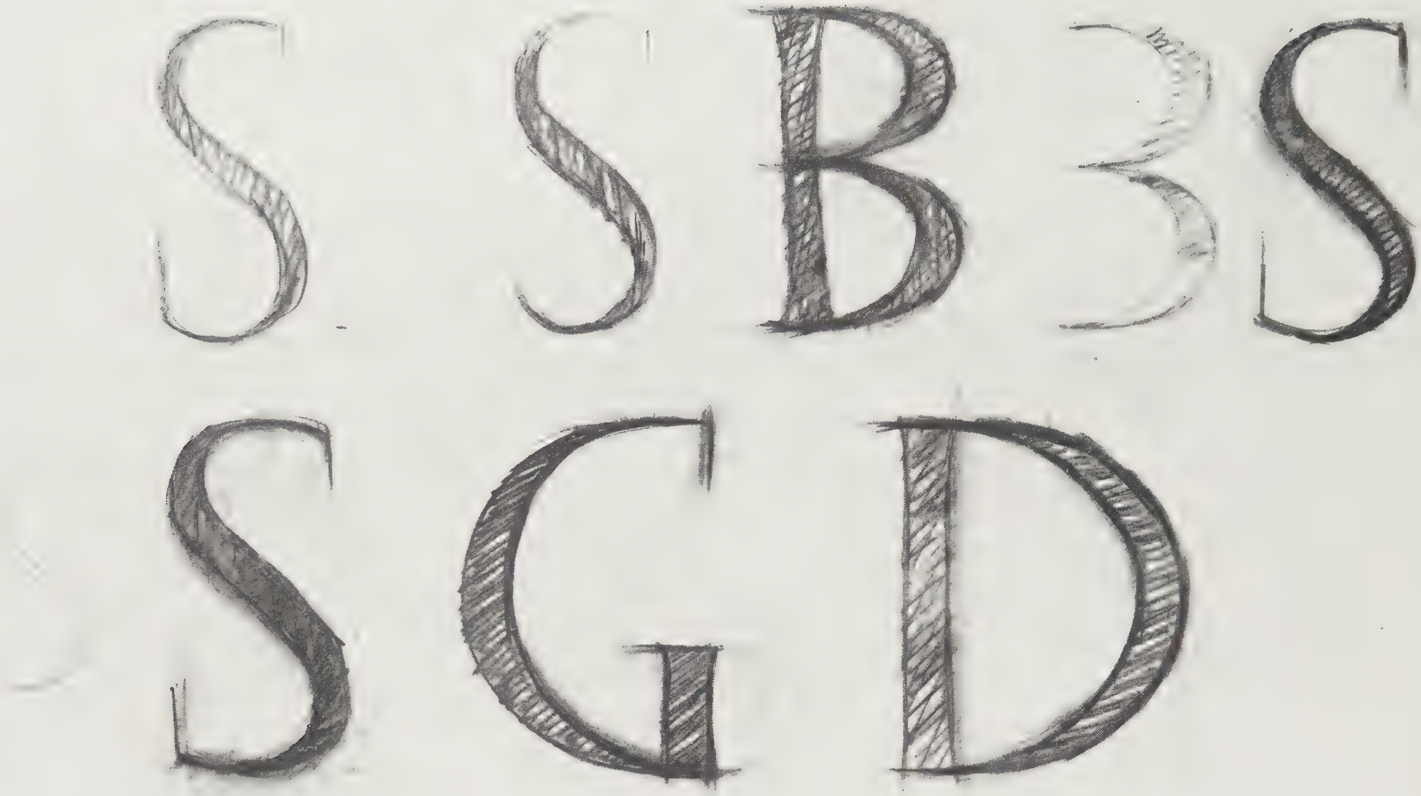
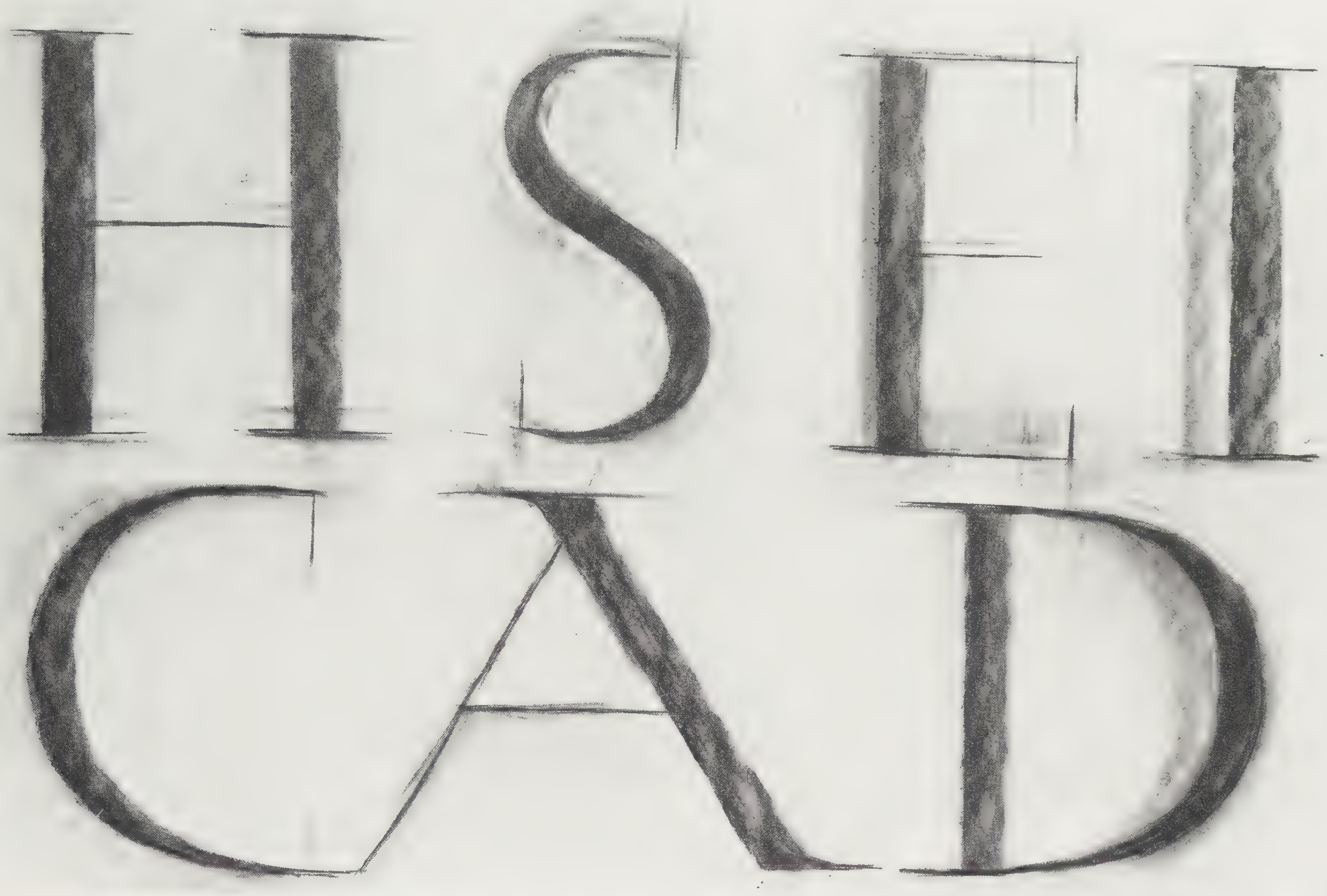




In comparison to the pencil exercises forming capital letters with the pen is more dependent on technical ability, writing material, and formal perception. The contrasting pen strokes are sketched on large newsprint paper in order to recognize their characteristics within the fluid structure of the letterform.

The examples here and on the following two pages show two technically different methods of sketching letterforms: sketching the contours and filling in the forms or sketching with the broad edge of the writing tool (lithographic crayon or charcoal).

Formal problems are explained at the blackboard.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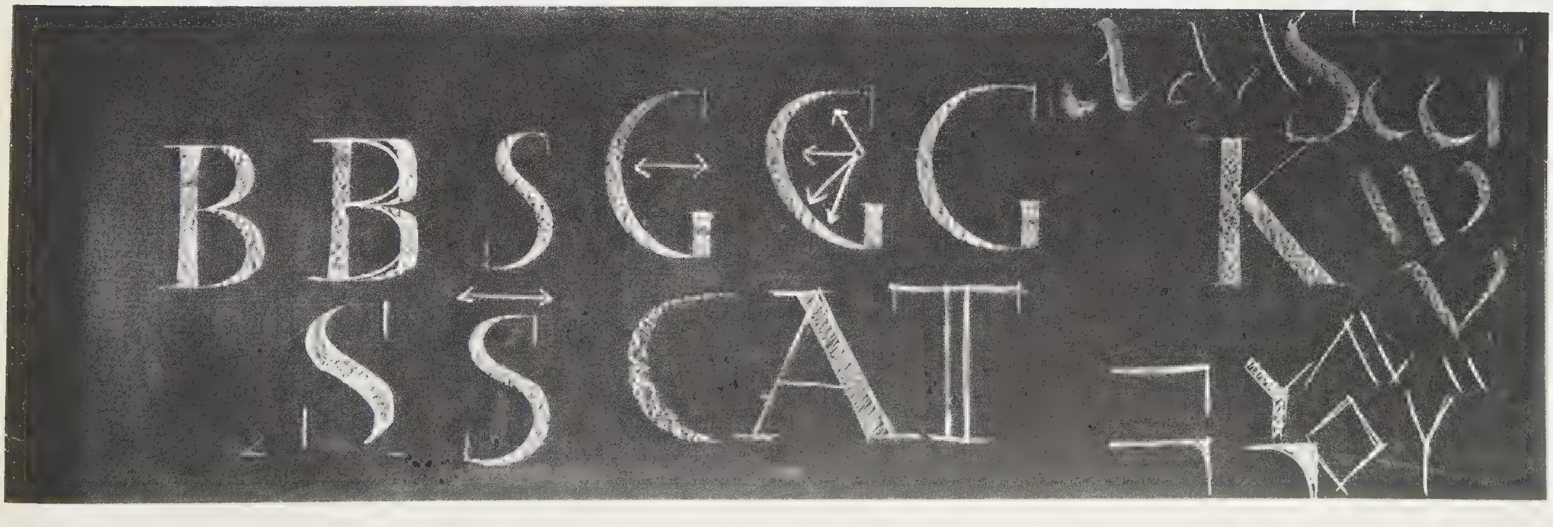
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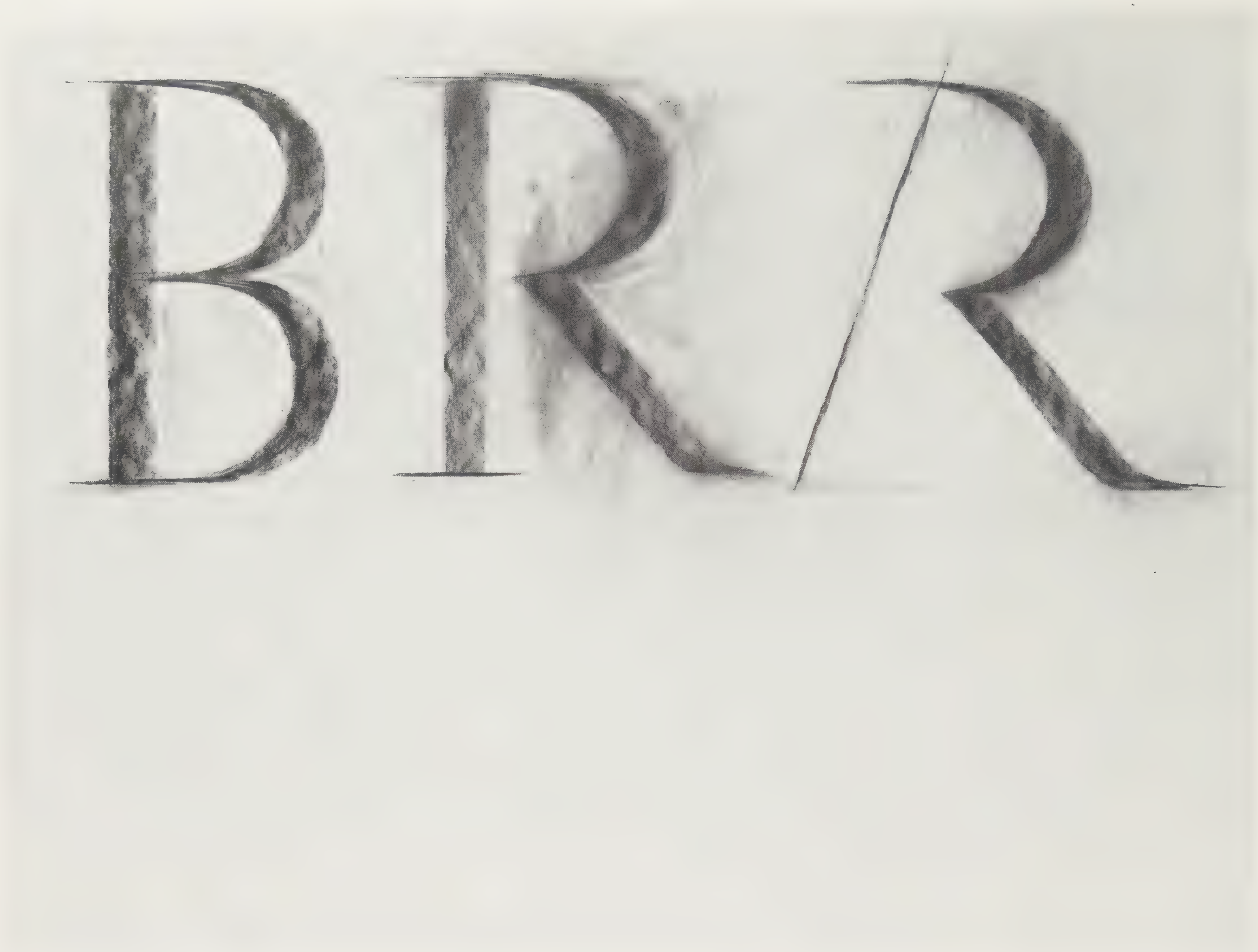
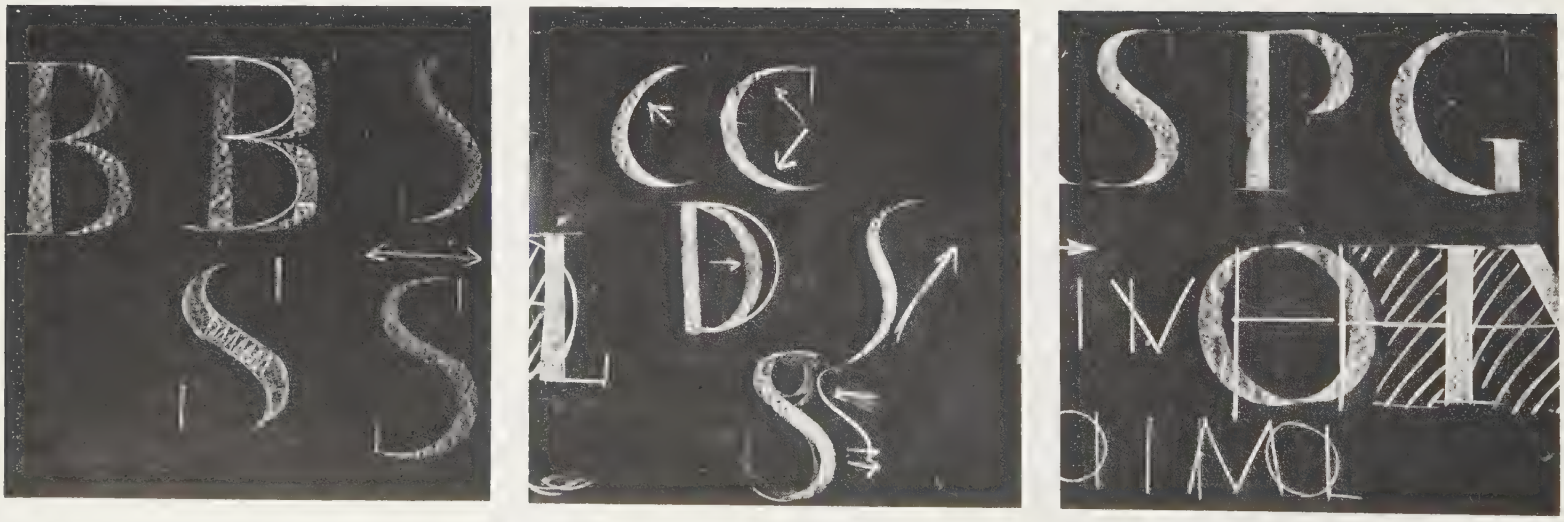
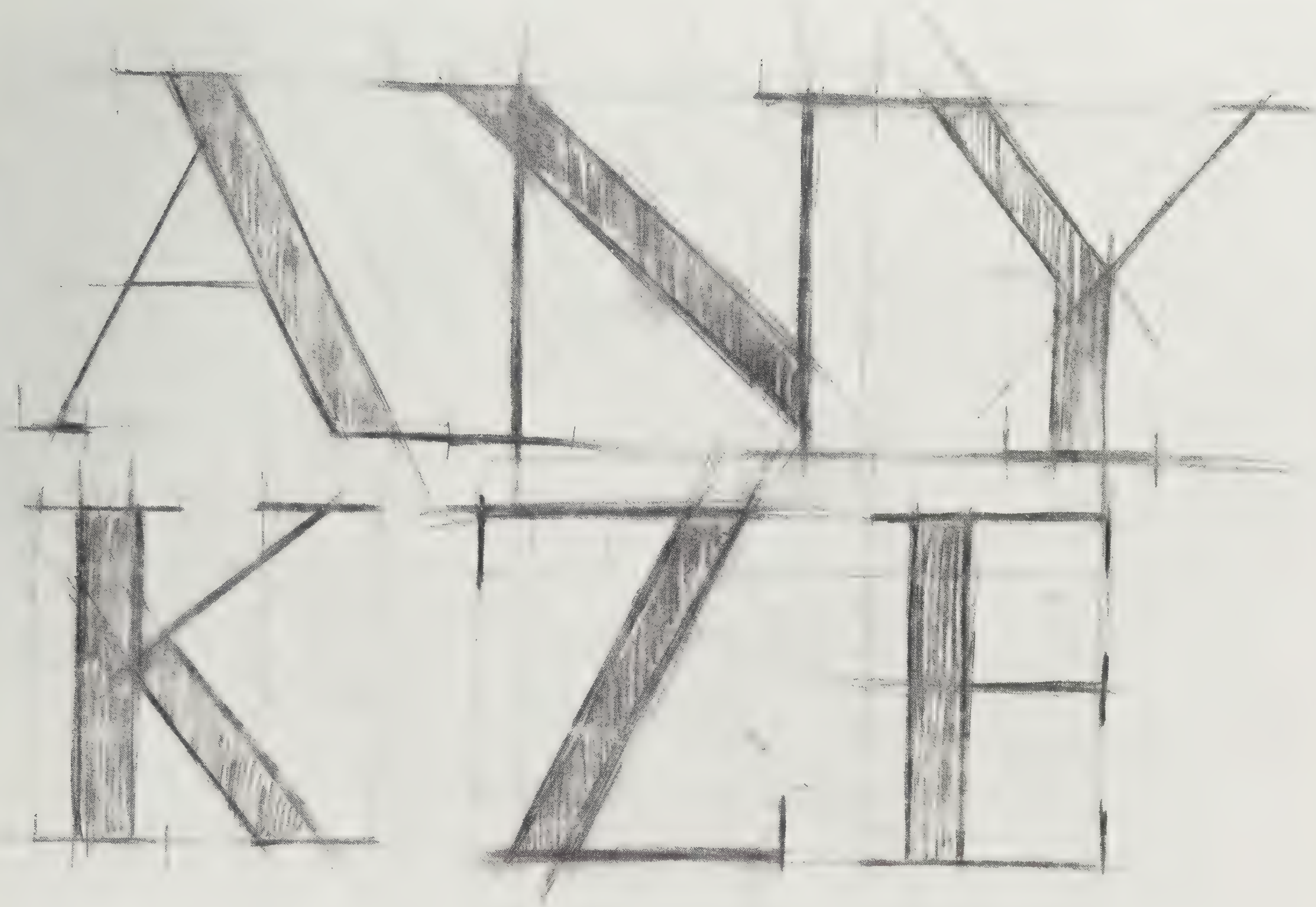


The photographs below left show blackboard explanations of problems such as curve development, form width, and letter spacing. The right-hand illustration shows students sketching. The large sketching paper is fixed on a movable tabletop. An oblique or vertical working surface enables the students to observe and control the large forms from a distance.

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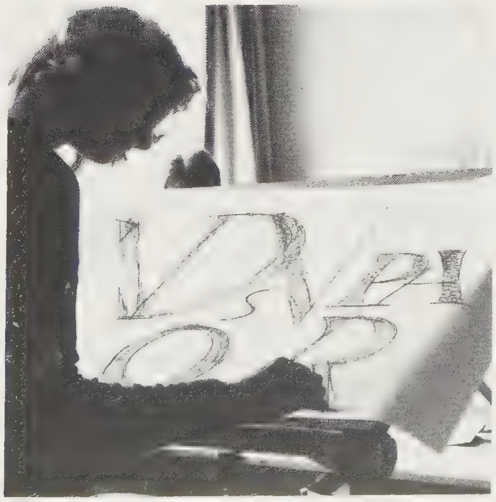
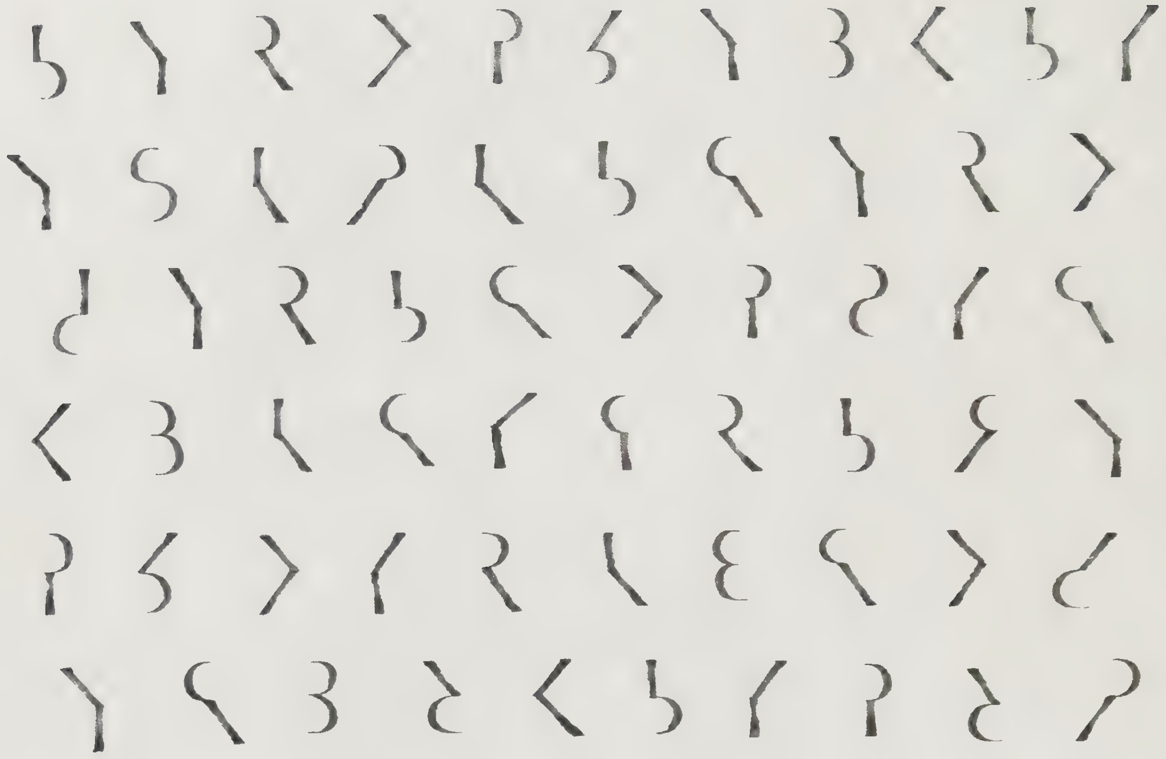
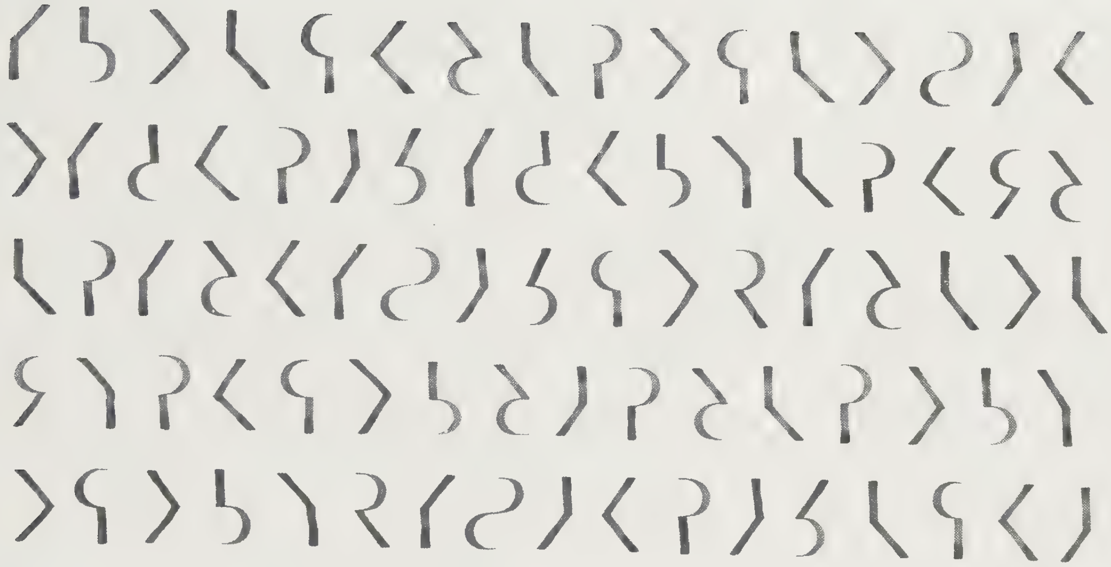
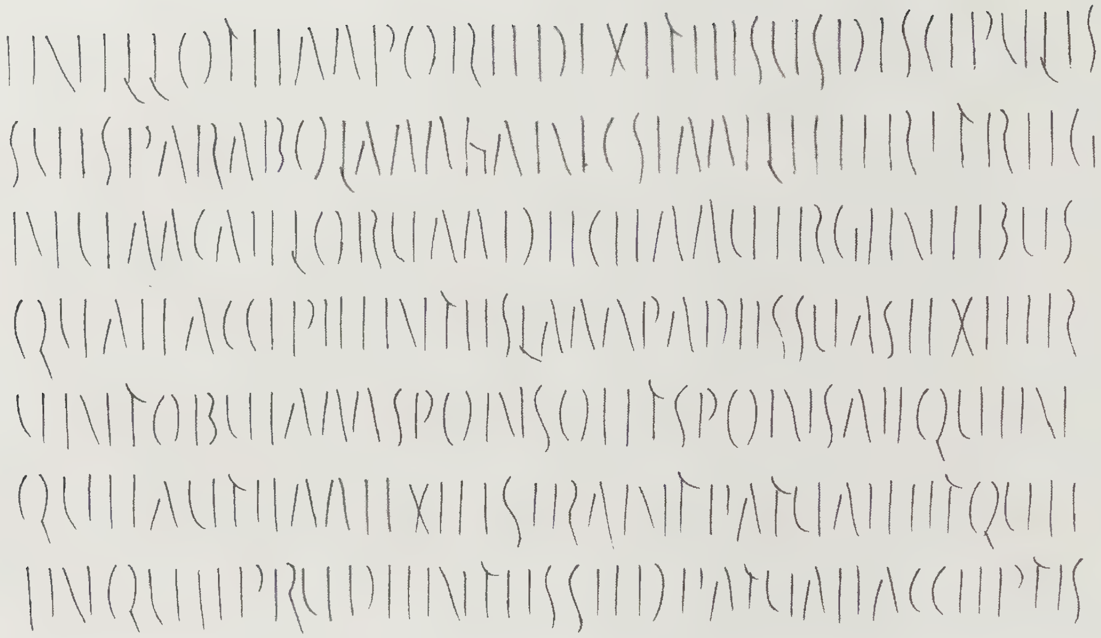




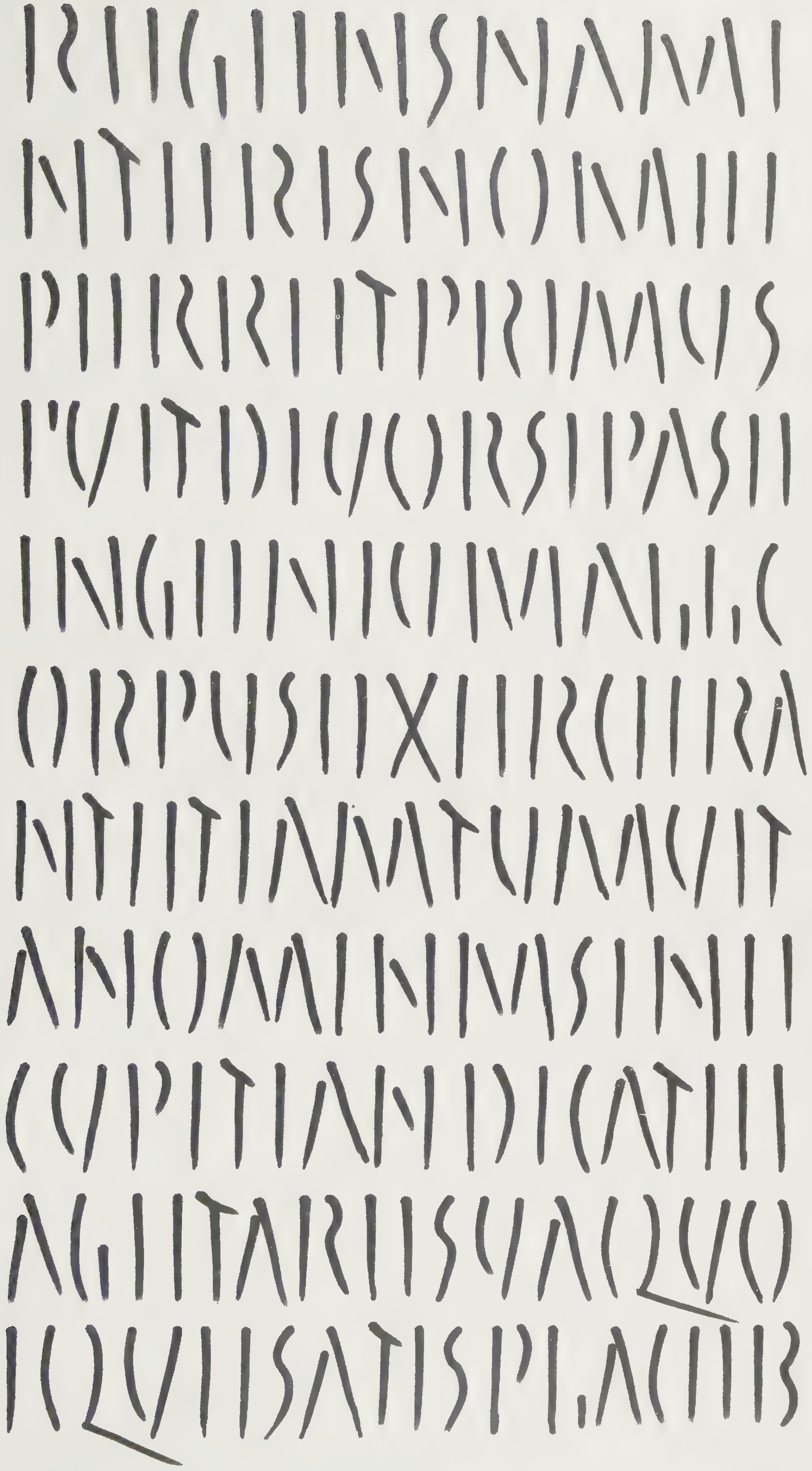
Optically adjusted placement of neutral signs and rhythmically balanced organization of the surface are also practised with the pen. Three elements—diagonal, vertical, and curve—are prerequisites for these exercises. They are combined into characters with two parts. The illustrations show two different but equally balanced compositions.





In the two preceding exercises the characters are written slowly. The wide metal nib does not allow quick execution of individual lines and letters, but more spontaneous strokes are possible with pencil, brush, or charcoal because they offer no resistance to the writing movement.

The illustrations show the optical and rhythmical organization of an uppercase text. Conscious control is subordinate to spontaneous, quickly executed writing movements. In this instance felt-tip pens of different hardnesses and sizes are used.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AGITARIISUAQUO
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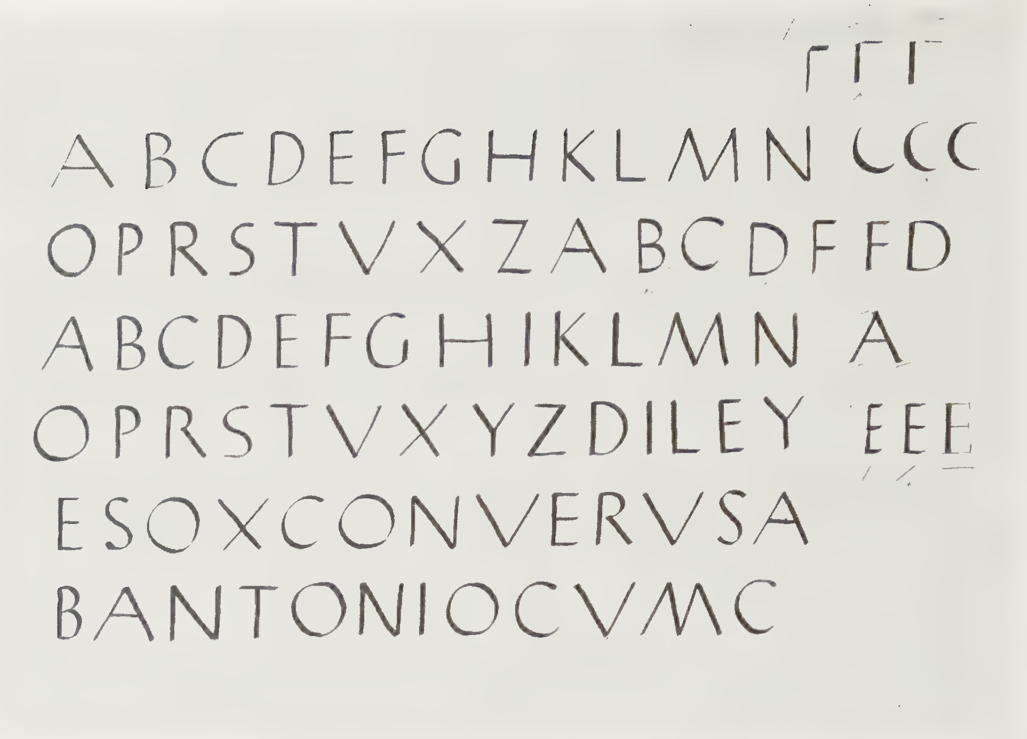
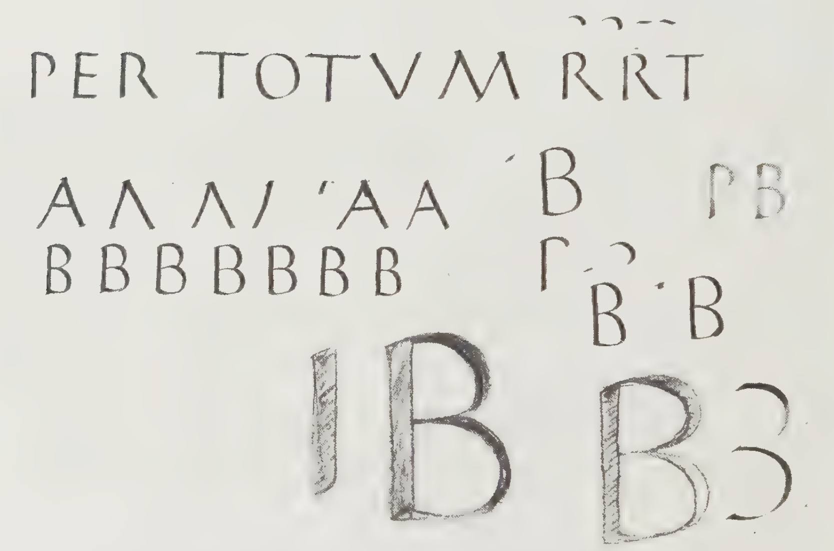
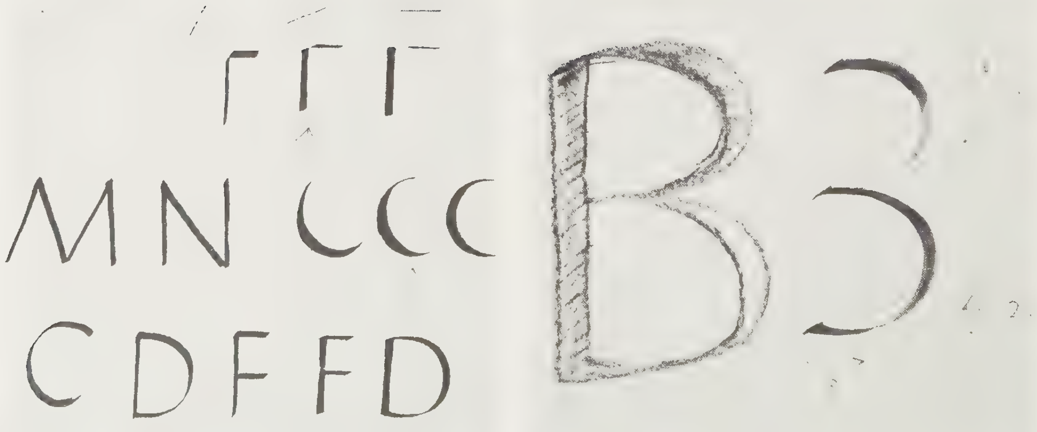
Less contrast between horizontal and vertical lines weight can be produced by changing the pen position from a horizontal to a diagonal angle. The curves shift axially from a vertical to a diagonal position. These letters appear more fluid in comparison to the preceding examples with stiff forms. As the letter structure changes with the angle of the pen, students become aware of fundamental possibilities of calligraphy.



These illustrations show changes in line contrast and in curves corresponding to the pen position. A 14° to 21° angle produces a contrasting relationship between horizontal and vertical lines.





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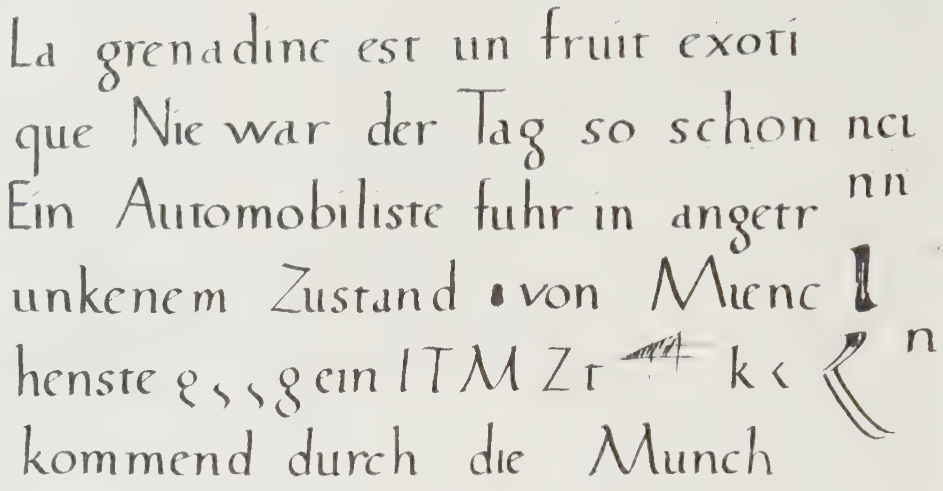
Writing lowercase letters is quite different from capital letters. In contrast to the individual, unconnected forms of capital letters, lowercase letters depend on optical and calligraphic connections between the characters, organization of the text into separate words, and clear separations between the lines. The lowercase letters allow for a fluid writing text. The rhythmic uniformity of the writing movements produces a personal texture. The integration of capitals into the lowercase text and the correct proportions of ascenders and descenders to the x-height are essential components in this exercise.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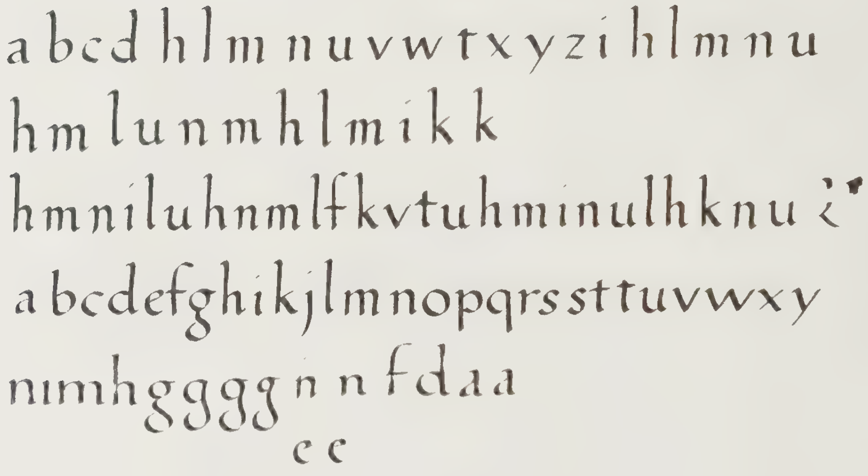
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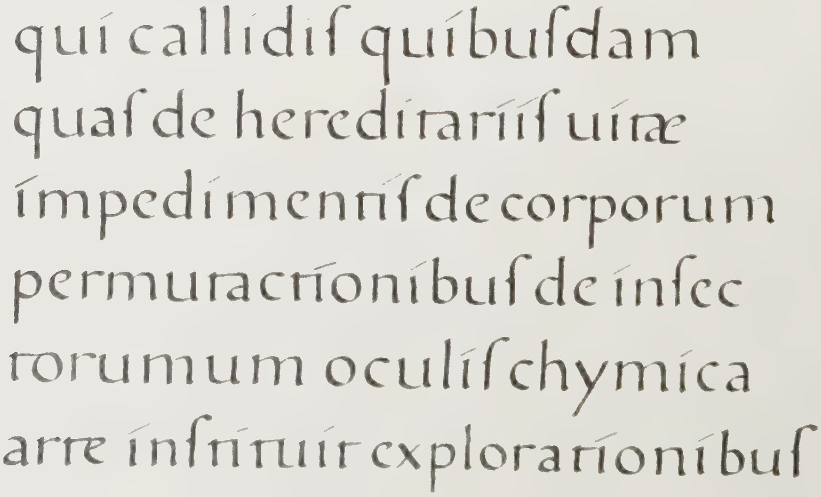
h m l u n m h l m i k k
h m n i l u h n m l f k v t u h m i n u l h k n u
a b c d e f g h i k j l m n o p q r s s t t u v w x y
n i m h g g g g n n f d a a
e c

These illustrations show the students' initial difficulties in clarity, fluidity, and rhythm. The large illustration on the right shows a lowercase text without word spacing or capital letters. Uniform spacing between the characters is stressed. The illustration on the last page shows an organized text with cursive, lowercase letters.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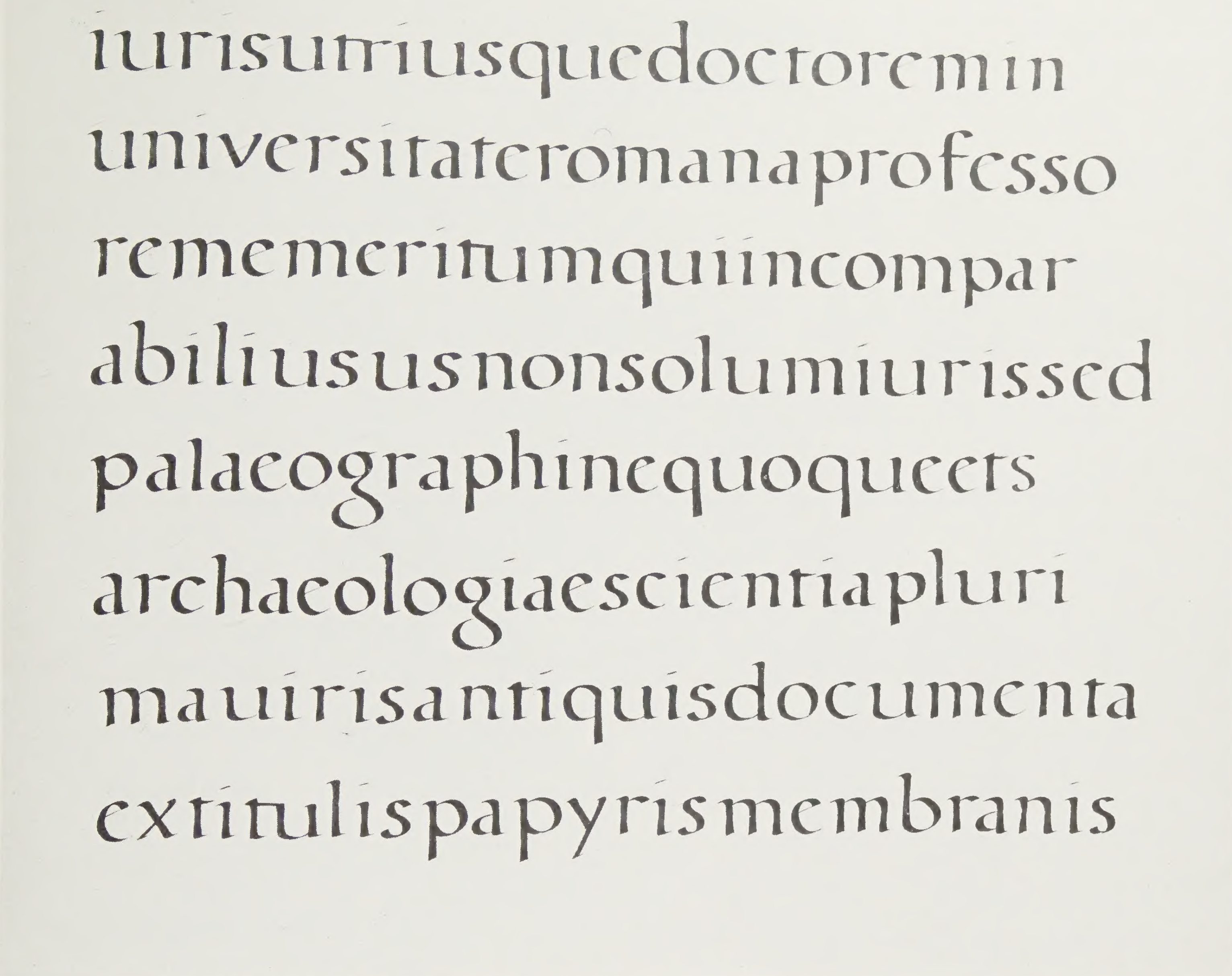
The photographs on the right-hand page show sections from blackboard explanations. The beginning and end of the vertical line are strengthened through pressure. In straight-standing and cursive lowercase letters—for example—the traditional connection begins at the bottom of the stem. The head of the t is just above the line of the body height, and the f curve should not extend too far to the right.



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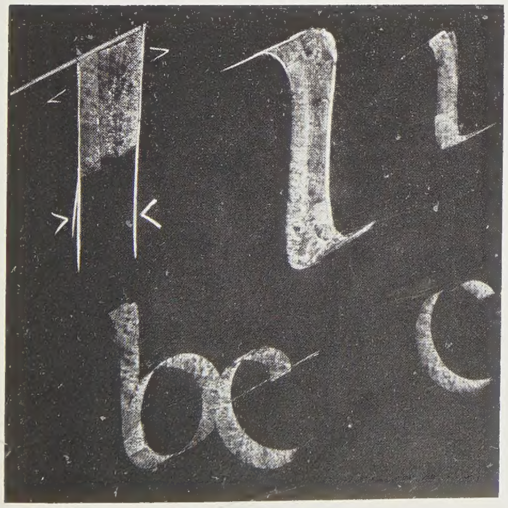

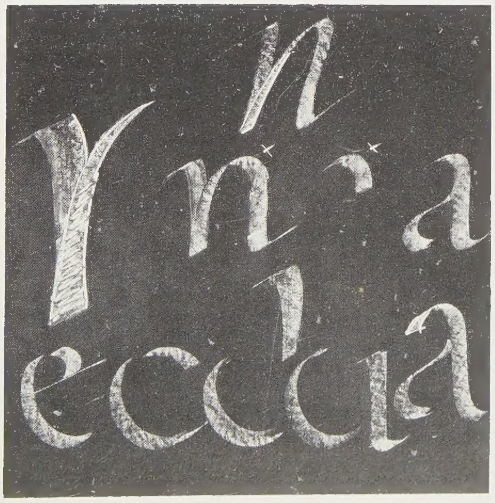

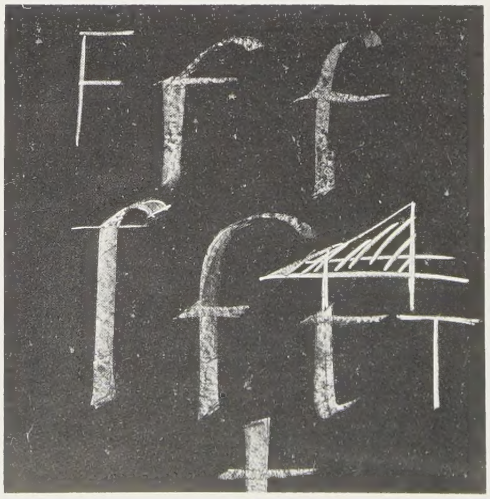

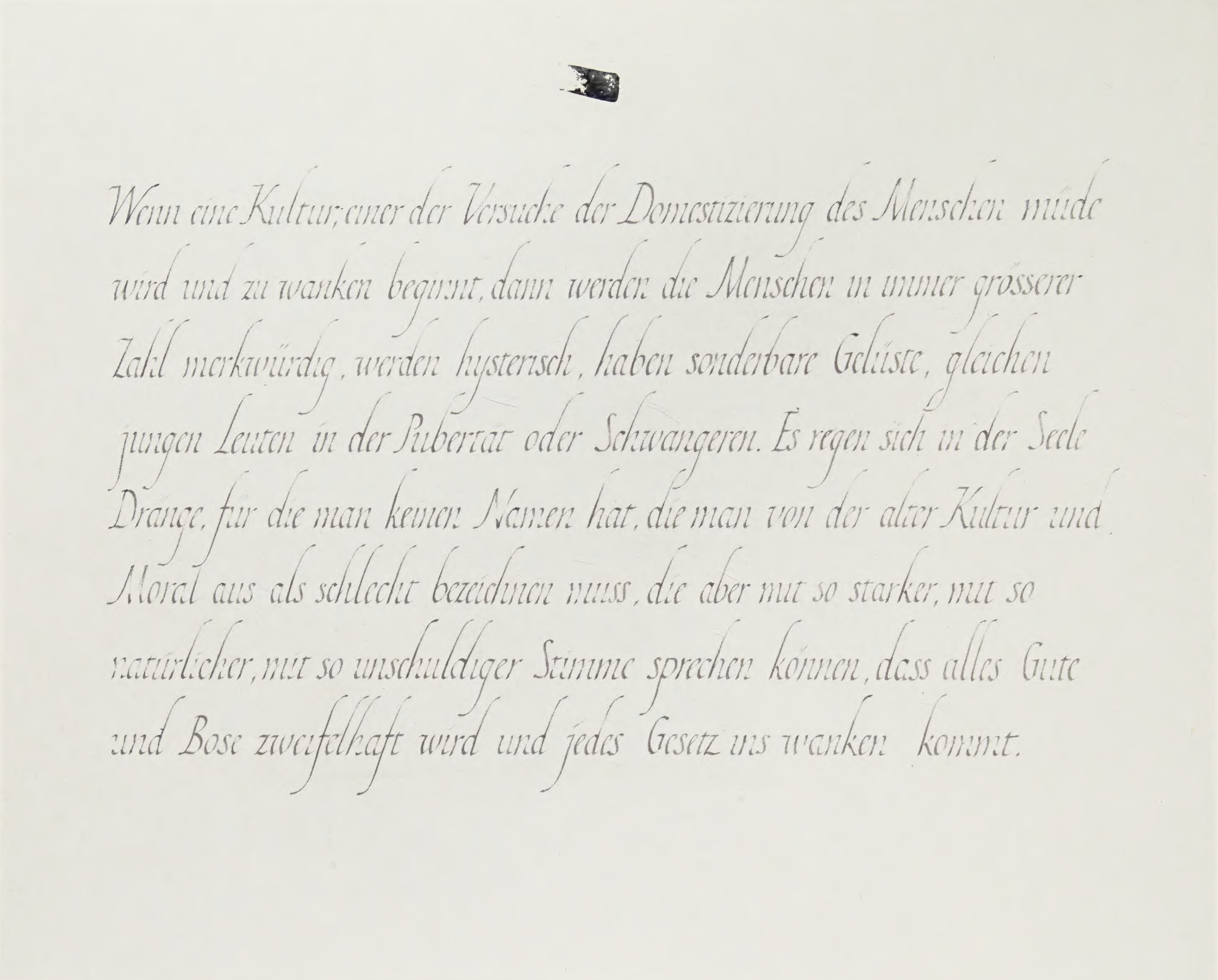

Wenn eine Kultur; einer der Versuche der Domestizierung des Menschen müde wird und zu wanken beginnt, dann werden die Menschen in immer grösserer Zahl merkwürdig, werden hysterisch, haben sonderbare Gelüste, gleichen jungen Leuten in der Pubertat oder Schwangeren. Es regen sich in der Seele Drange, für die man keinen Namen hat, die man von der alter Kultur und Moral aus als schlecht bezeichnen muss, die aber mit so starker, mit so natürlicher, mit so unschuldiger Stimme sprechen können, dass alles Gute und Bose zweifelhaft wird und jedes Gesetz ins wanken kommt.

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To be admitted into the program, students must be at least 15 years old, pass an entrance examination, and attend all the classes. The one-year program includes 42 classroom hours per week. All classes are conducted at the school and are limited to a maximum of 24 students.

Most of the faculty members are also professionals in their field, certified specialists who are active in visual, creative areas. Throughout the entire program, the teachers are available for individual or group consultation, which ensures that every student has an equal opportunity for a successful training. The teaching-learning process varies with each course. It can progress in several directions: linear, from simple to difficult principles; punctual, a collection of experiences derived from individual assignments; or complex, an analysis of variation sequences as an insight into the creative process.

The current standards of the program are outlined in this series, and the working procedure is explained clearly and understandably in chronological sequence. In order to clarify the interrelationships among the courses, they are categorized according to the teaching-learning process involved. The entire visual-creative program is presented in four volumes, each of which is a complete unit in itself and provides an introduction, course descriptions, and detailed illustrations.

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3

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Volume
3

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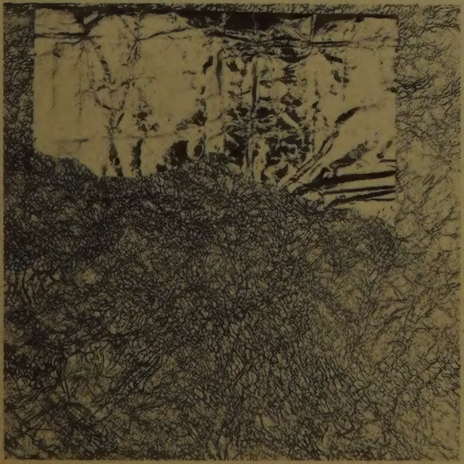
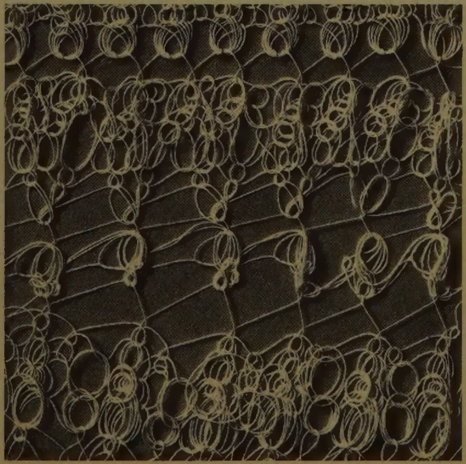
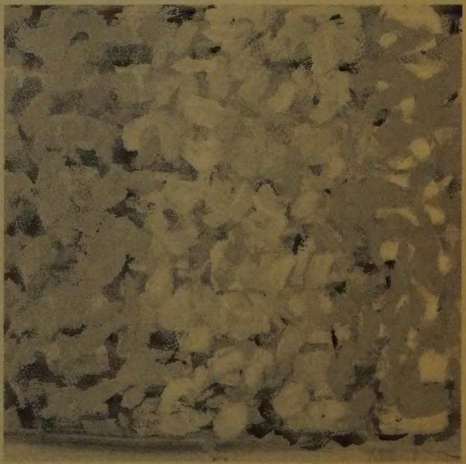
Textile Design
Color 2

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Basel, Switzerland

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Volume **2**	Memory Drawing Technical Drawing and Perspective Lettering
Volume **3**	Material Studies Textile Design Color 2
Volume **4**	Color 1 Graphic Exercises Dimensional Design

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General Introduction

Kurt Hauert,
Head of the Foundation Program

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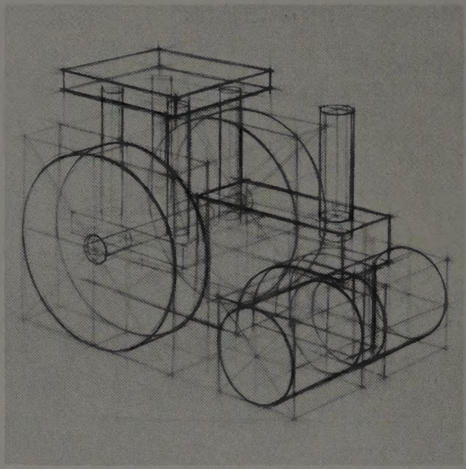
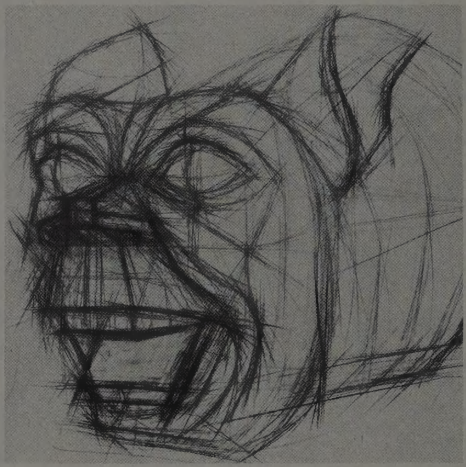
The Foundation Program is based on an objective, developmental educational system over the past thirty years. It disregards fashionable vogues but allows enough freedom to integrate necessary innovations. It offers a model for all teachers, students, and administrators who are interested in a critical, investigatory approach.

In conclusion special thanks are expressed to those who devoted their time and energy to the realization of this work.





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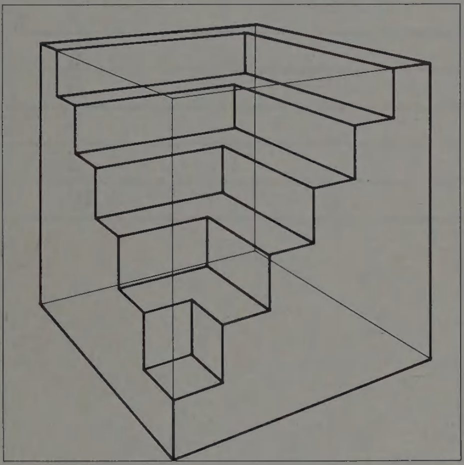

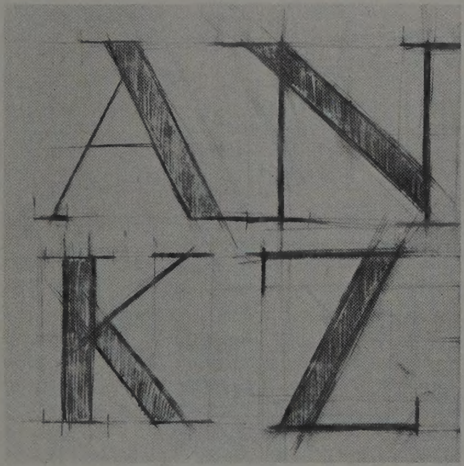

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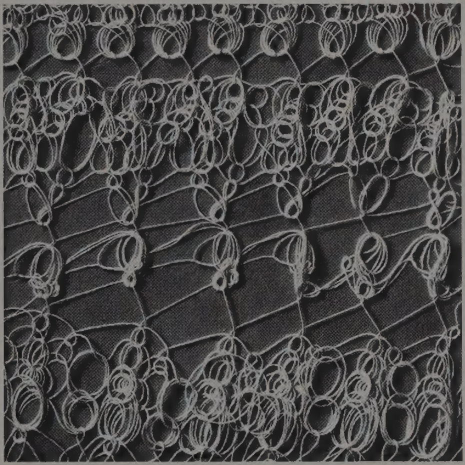

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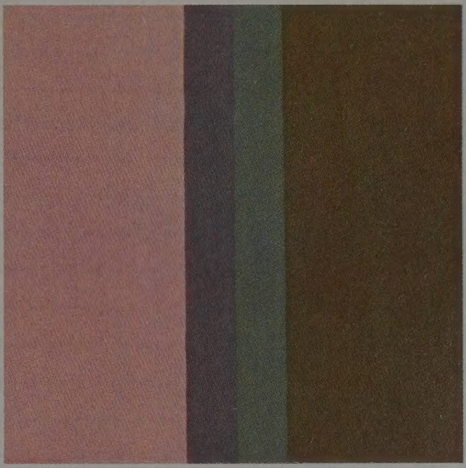

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Contributors:

Color 1 11
Zwimpfer M.
Graphic Exercises 42
Maier M.
Dimensional Design 74
Grossenbacher M.

Schedule Summer Semester 1975
Foundation Program

	Hours
Graphic Exercises	4
Color 2	3
Color 1	3
Object Drawing	4
Nature Drawing	2
Lettering	2
Memory Drawing	3
Textile Design	2
Dimensional Design	4
Literature, Language	2
Physical Education	2
Information	2
Technical Drawing and Perspective	3
Material Study	3
Object and Museum Drawing	3
	42

Number of faculty in the Foundation Program	26
Number of students in the Foundation Program in six parallel classes	130 ca.

Directorship:

until 1970 Emil Ruder
since 1971 Niklaus Morgenthaler
Head of the Foundation Program:
since 1971 Kurt Hauert

Faculty of the Foundation Program

Beck, A.	Economics
Biesele, I.	Graphic Design
Bollin, M.	Sculpture
Bürgin, G.	Decoration
Burla, J.	Sculpture
Eya, L.	Architecture
Gautschi, R.	Painting
Grossenbacher, M.	Sculpture
Gürtler, A.	Letter Design
His, A.	Painting
Hutter, J.	Painting
Keller, T.	Painting
Kern, R.	Painting
Kern, U.	Drawing
Klotz, L.	Painting
Maier, M.	Graphic Design
Mengelt, C.	Graphic Design
Mengelt, M.	Graphic Design
Pola, P.	Painting
Schäfer, E.	Drawing
Sommer, H. P.	Graphic Design
Thomann, M.	Language
Tramèr, J.	Painting
Von Tomei, J.	Graphic Design
Zwimpfer, G.	Graphic Design
Zwimpfer, M.	Graphic Design

Bernoulli, L.	Architecture	1972–73
Bühler, G.	Drawing	1968–69
Ganahl, K.	Press-editing	1966–67
Gruber, A.	Sculpture	1969–70
Hartmann, H.	Drawing	1968–69
Hauert, K.	Drawing	1969–70
Hernandez-Moor, L.	Textile Design	1972–73
Keller, J.	Drawing	1974–75
Lienhard, E.	Sculpture	1972–73
Messerli, E.	Painting	1972–73
Ryser, F.	Painting	1973–74
Stettler, G.	Painting	1967–68
Stettler, P.	Painting	1974–75
Sulzbachner, M.	Painting	1968–69
Vollé, R.	Architecture	1968–69
Vieira, M.	Sculpture	1968–69
Weidmann, H.	Painting	1966–67

Volume
3

Material Studies
Textile Design
Color 2

The primary feeling for material, for its beauty and possibilities of expression, is largely lost with technological and industrial specialization. We daily encounter new materials and larger quantities, which demand more than abstract, intellectual, and commercial knowledge and behavior. An involvement with materials goes back to the teachers of the Bauhaus and the development of fine arts during the last 50 years. The goals of this volume are a familiarity with the interrelation of material, technique, and form and with tactile and optical qualities, a differentiation of tactile feeling, observation, manual experimentation, spontaneous invention and discovery, and an understanding of different techniques and raw materials.

Single results are achieved in many elementary exercises with minimal material and technical investment. The individual exercises are not arranged systematically: corresponding to the subjective, spontaneous working method, the evaluation of criteria is redefined in each exercise by comparing results. Experience with the materials and with their characteristics is derived from creative involvement with optical and tactile sensitivity and with the critical consciousness. Personal, intuitive differentiations corresponding to individual abilities result through experimentation and stimulate new goals for faculty as well as students. The goals of the teaching and learning process are clarified through cooperative involvement with the more structured courses described in volume 4.

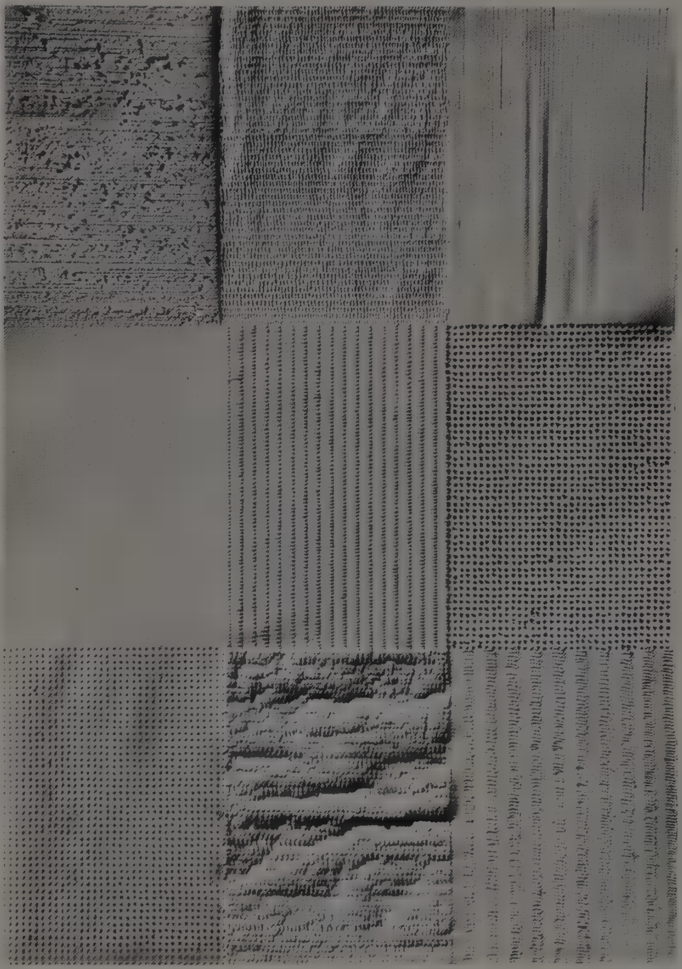
Material Studies

In today's technical civilization a feeling for the characteristics and possibilities of materials is suppressed. Tactual sensitivity and fantasy are the goals of this course: students are stimulated by manipulating and working the materials as form and expression. Unbiased experimentation, spontaneous perception of chance occurrences and their consequent development produce new, surprising possibilities that are unpredictable intellectually.

In elementary exercises students investigate the changing appearances of materials in different environments, the manipulation of the surface, the kind and incidence of light, and compositional rules. The relationships between the character, form, and color of materials present limitations in the definition of expressive possibilities. Ordinary raw materials and disposables are worked with simple tools; awareness of the media [illegible] developed through exercises [illegible] alteration, texture, and touch (with disposable materials); discovery (with wood and synthetics); connecting (with many materials); and themes (transparency and fluidity). Unusual elementary working techniques such as tearing, scratching, breaking, burning, folding, slitting, scoring, hammering, cutting, gluing, and fastening are explored and used.

Manual-technical, formal, and compositional interrelations are compared and evaluated through single exercises and themes with as many variations as possible. Thus, new stimulation and various qualities of expression are produced. The students' valuation possibilities consist in exchanging experiences, comparing working results, and working together. Technical ability, critical consciousness, and manual aptitude develop with the number and complexity of the exercises.

Paper is used everyday in a conventional manner as wrapping or packing material and for drawing, writing, and printing. The natural surface and structure are transformed and disfigured through unconventional mechanical activities. Experience with the material characteristics of paper through physical contact with the resulting textures develops tactile sensitivity. A new optical relationship to the raw material through its transformation is produced in technical, consciously unpretentious exercises with simple tools.

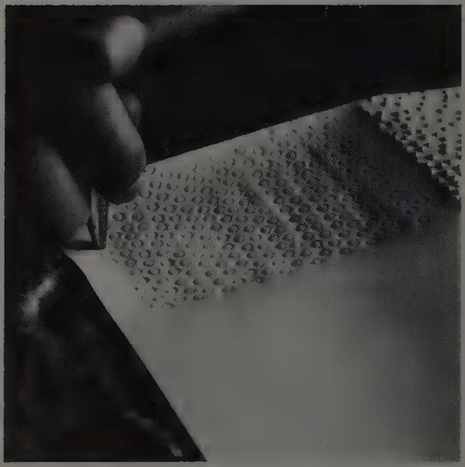


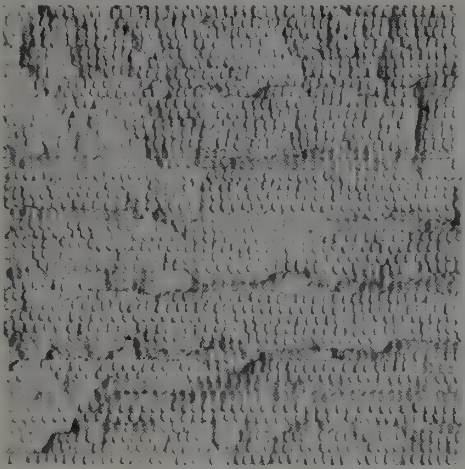
A sheet of paper is divided into nine sections, each of which is gradually differentiated in texture with simple tools: knives, nails, and needles. The number of sections can be expanded for other discovered possibilities. The illustrations on the following two pages show details and single studies of such work.

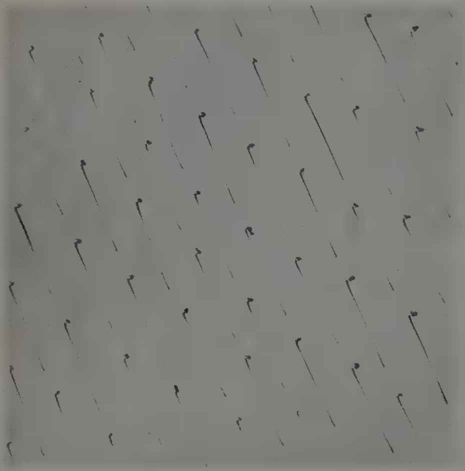
The photographs here and on the following two pages document the methods and tools used to create textures.

A textural relief is produced by lightly tapping on a wood chisel and its even shifting.

Indented round forms are produced by pressing or lightly tapping on ■ metal punch.





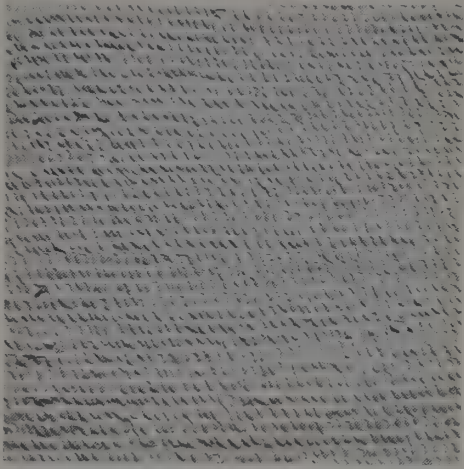


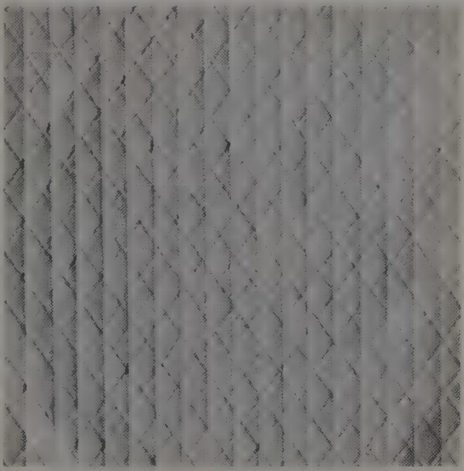
From top to bottom:
The head of a nail is slanted and hammered with different intensities against the paper.

A spatula or wood chisel is used rhythmically to create hammered depressions at regular intervals.

The imprints from a nail head tapped against the paper on soft cardboard produces a raised surface on the opposite side.

Finely scored surfaces are achieved with the point of the nail, needles, the back of the knife blade, or similar tools.



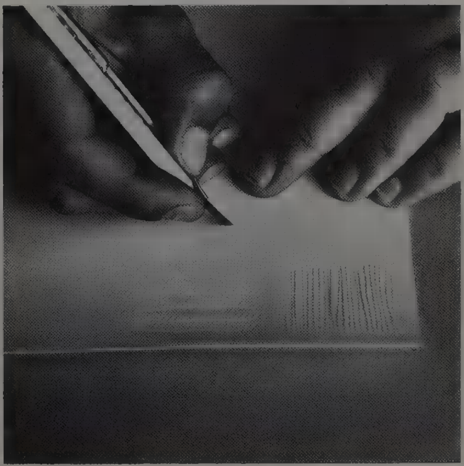


The surface of the paper is scratched or lightly cut with a dull knife held at a slight angle from the side.

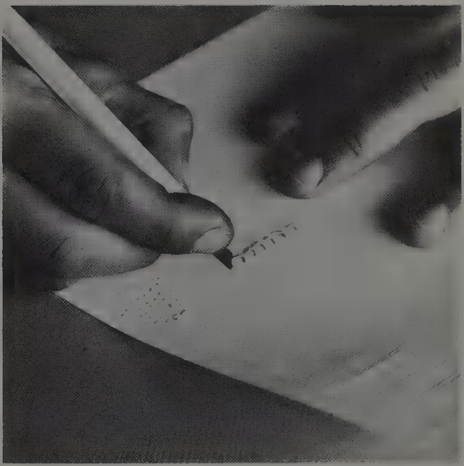
Linear reliefs are produced by scoring the back side of the paper on a soft support.

The surface of the paper is slit or cut with a knife held at a slight angle.

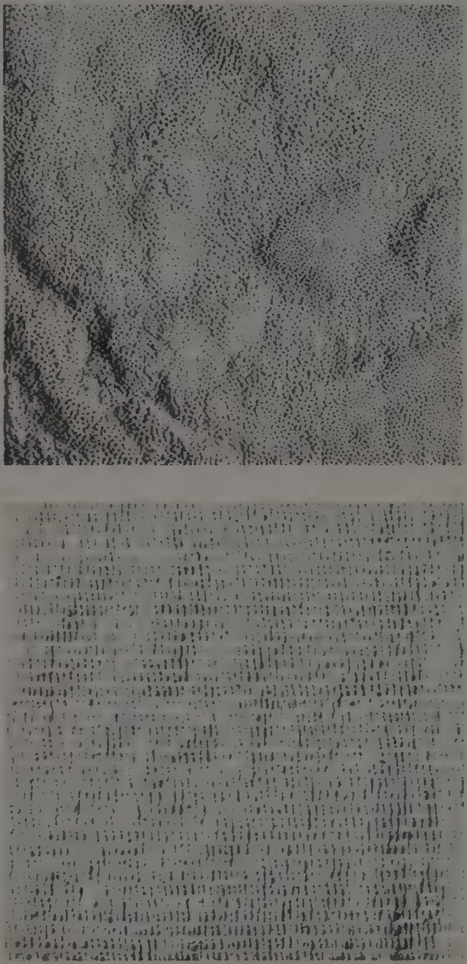
Various textures are discovered by scratching the paper with knives held in different positions.



Small triangular shapes with a relieflike grid are formed by cutting and folding back the resulting elements with a knife.

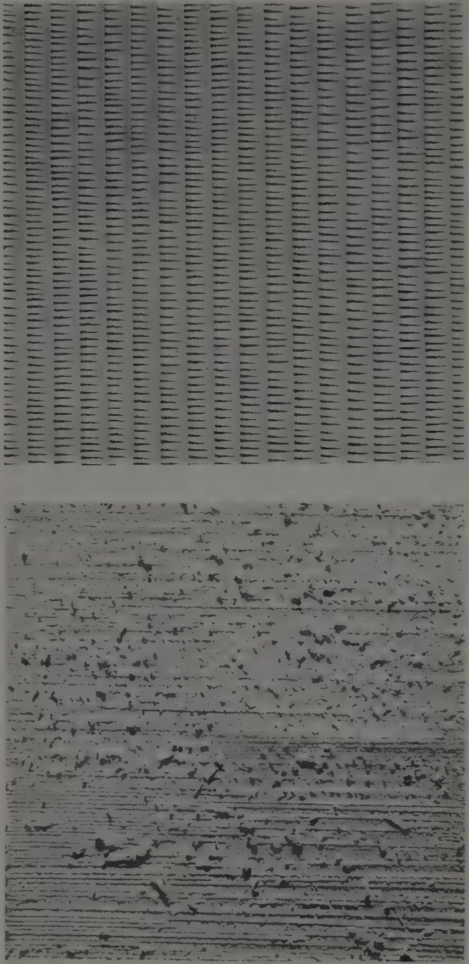


From top to bottom:



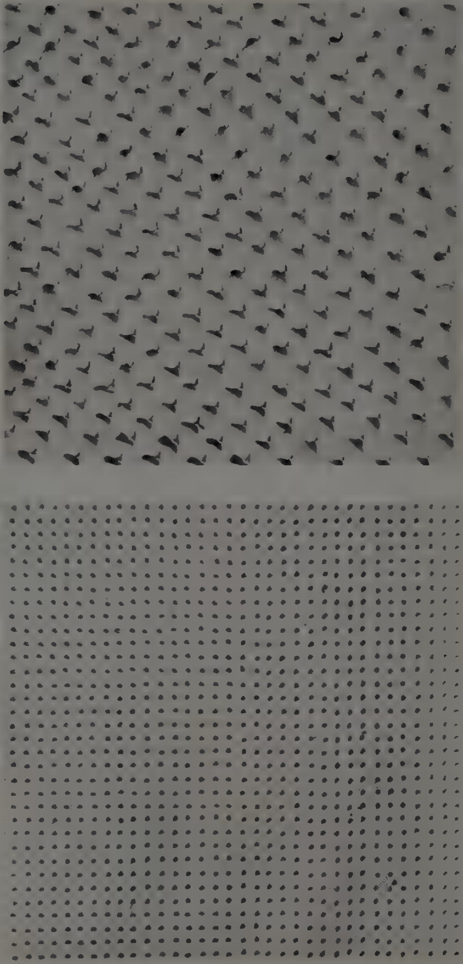
Fine, irregular holes, made with a needle on a soft support, produce amorphous elevations on the back of the paper.

Small vertical slits are formed on the surface with a knife held at a slight angle.



Regular, repeated notching of the paper surface is produced with the point of a knife held at a steep angle.

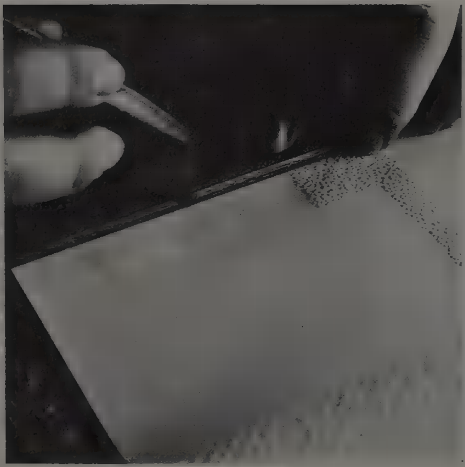
The surface is torn and scratched with a knife or needle by repeated scoring at a slanted position.



Small, regular incisions are opened with the flat point of the knife.

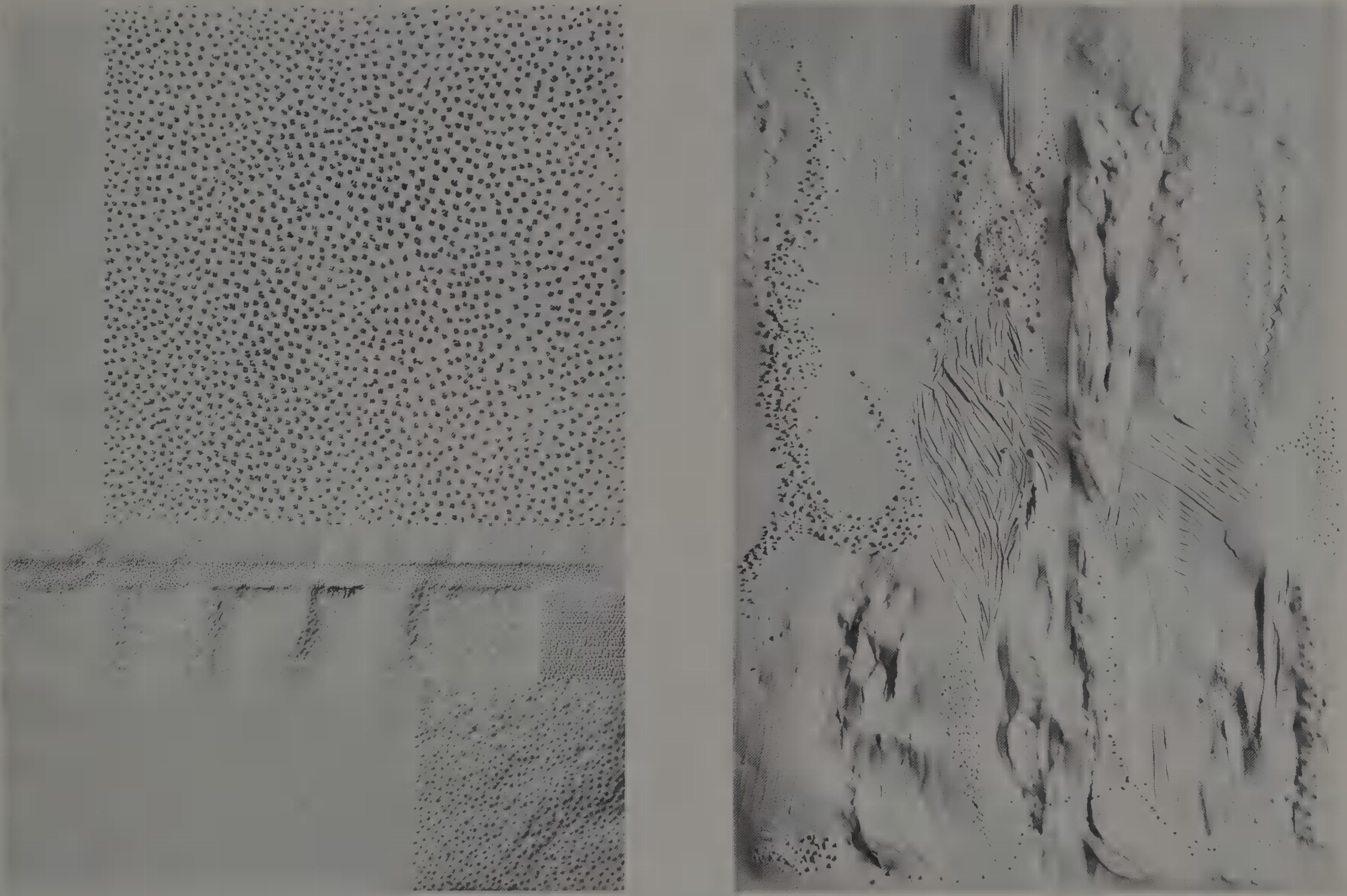
Uniform holes are made by punching a needle through the paper.

The surface of the paper is slit or scored with a knife and a straightedge.



The paper is punctured with a needle held perpendicular to the surface on a cardboard support.

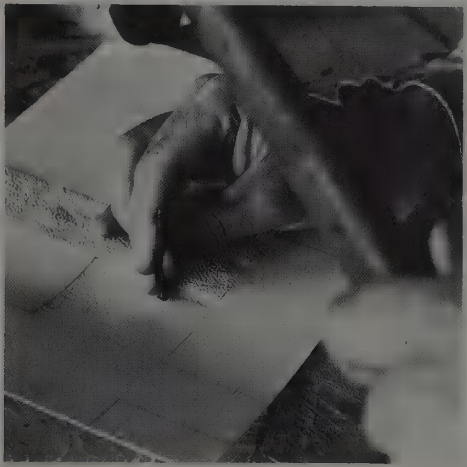
Various textures are achieved by changing the position of the needle and using different supports.



Results from the individual textural studies are used in a horizontal-vertical, architectural composition. A contrasting free, organic composition is shown on the right.

The surface is worked by tapping with a hammer.

Abundant variations are produced by tapping the head or tip of a nail against the paper.

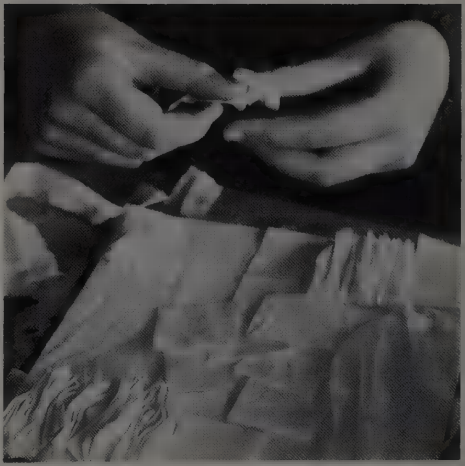


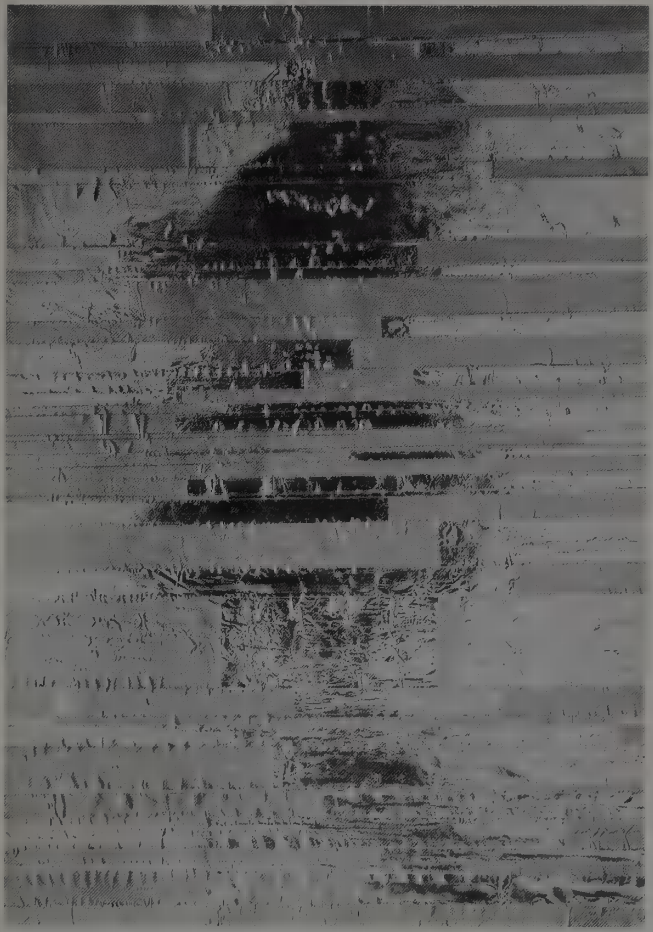
Notching is produced by lightly tapping a chisel or spatula with a hammer. Similar effects are possible with other tools.

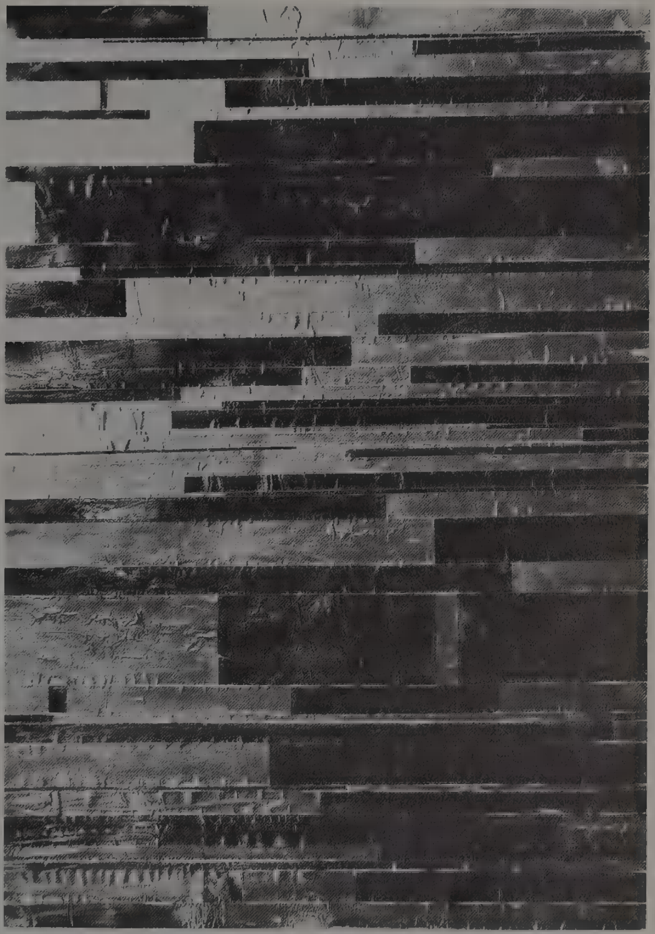
Further possibilities are found by manipulating different paper qualities. White or dull papers and cardboards are used to avoid confusion between the expression of the material itself and color.

In the two following examples the structure of soft paper, napkins, and corrugated cardboard is changed by tearing, folding, crumbling, layering, and soaking in water.

The photographs show how napkins are worked into a composition by folding, cutting, and gluing.

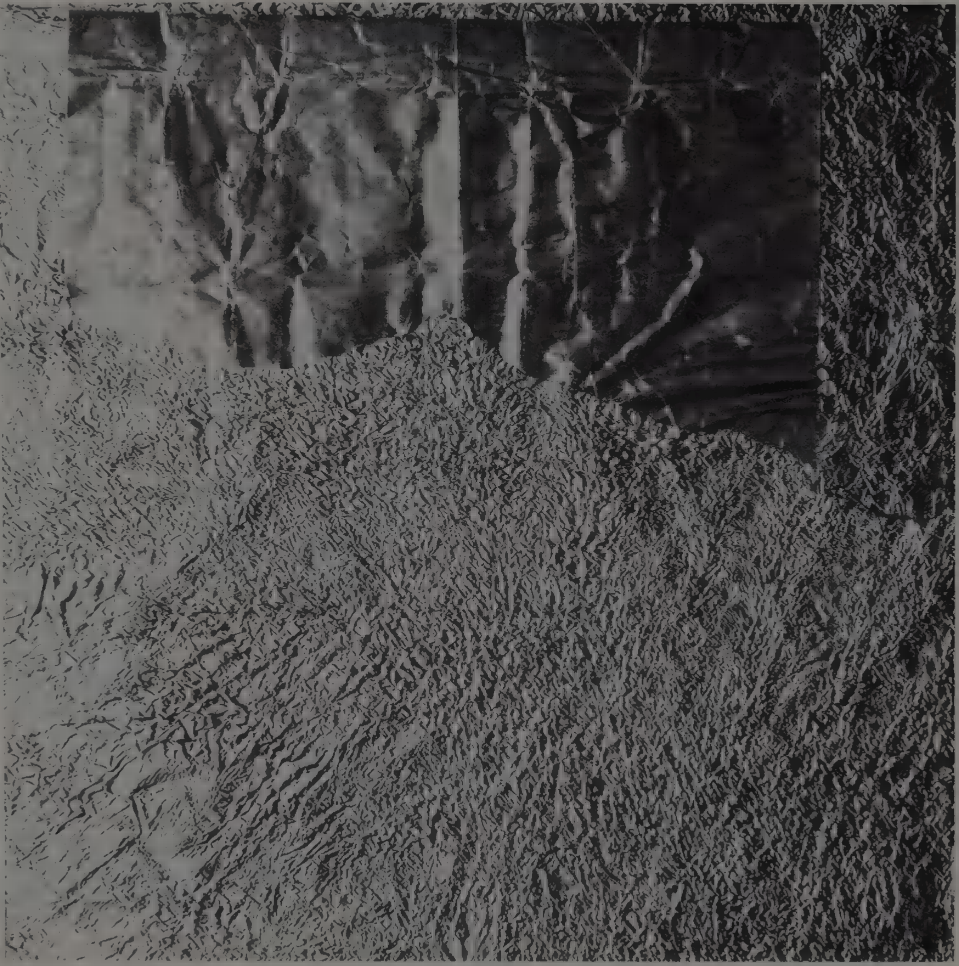


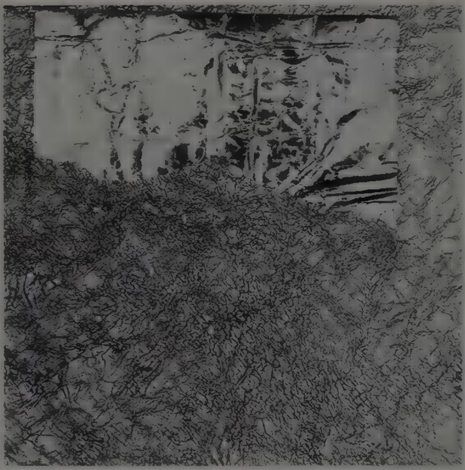




Here and on the following two pages is shown work based on the contrast mat-glossy. Unlike the preceding exercises, in which tactile experiences are primary, changed optical appearances, based on the reflective properties of light, predominate. Disposable materials, wrapping paper, and used aluminum foil are extensively worked with tools such as knives, scissors, scoring sticks, and glue. Abundant and unexpected creative possibilities are produced by discovering chance effects in geometric and organic compositions.

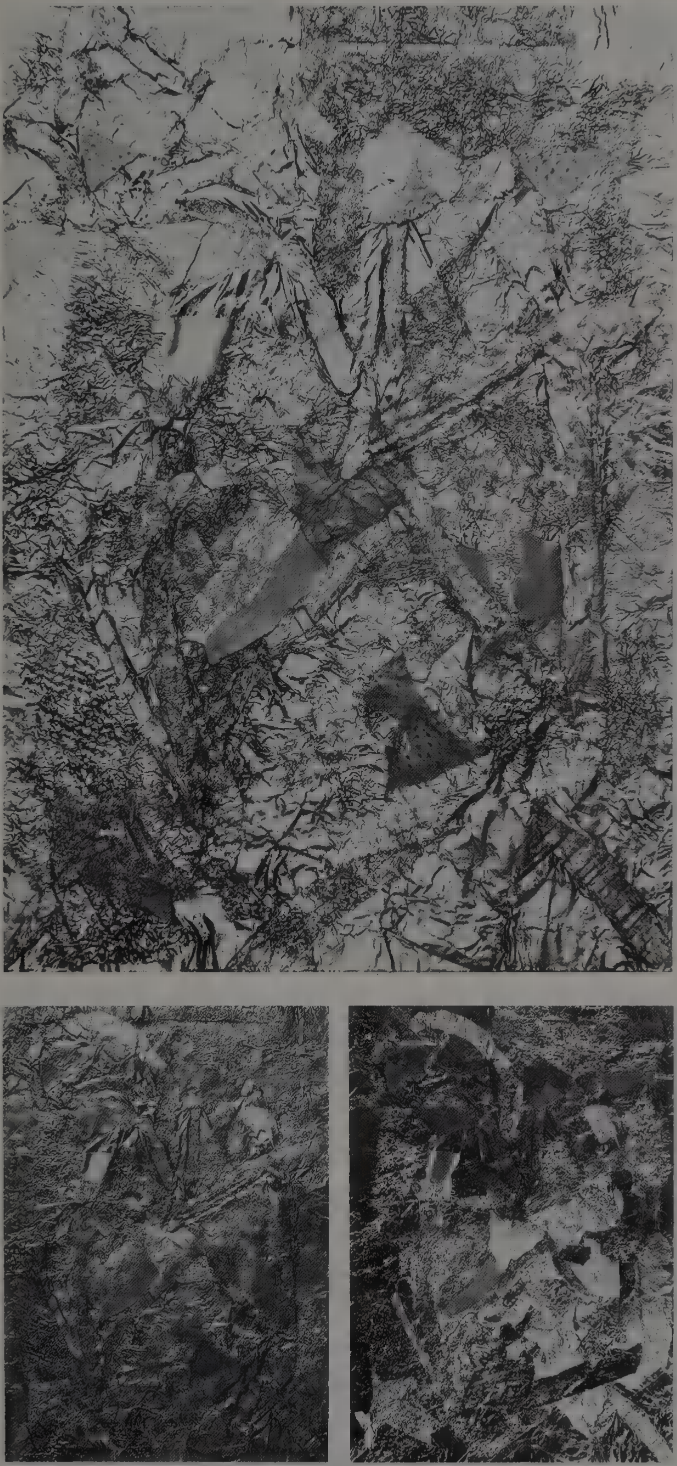
Both examples show the same complex, horizontal-vertical composition under different lighting conditions.

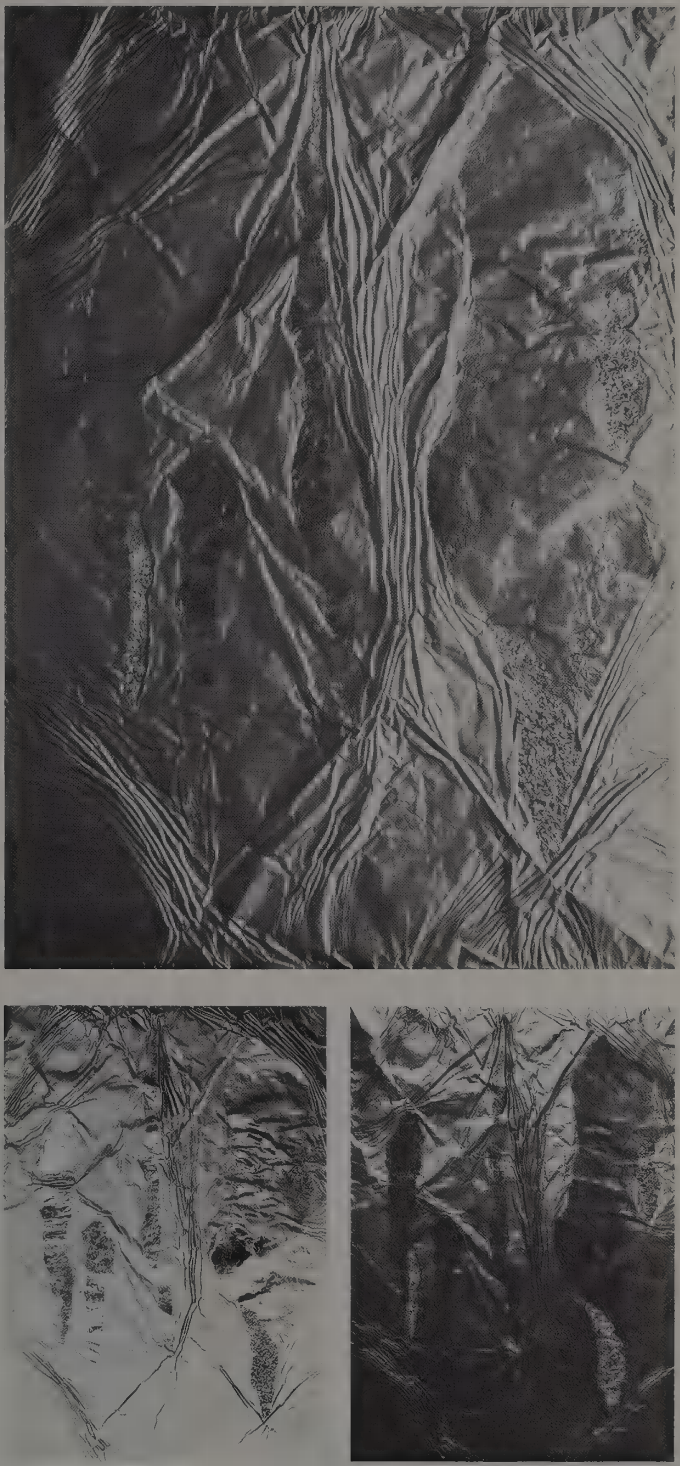




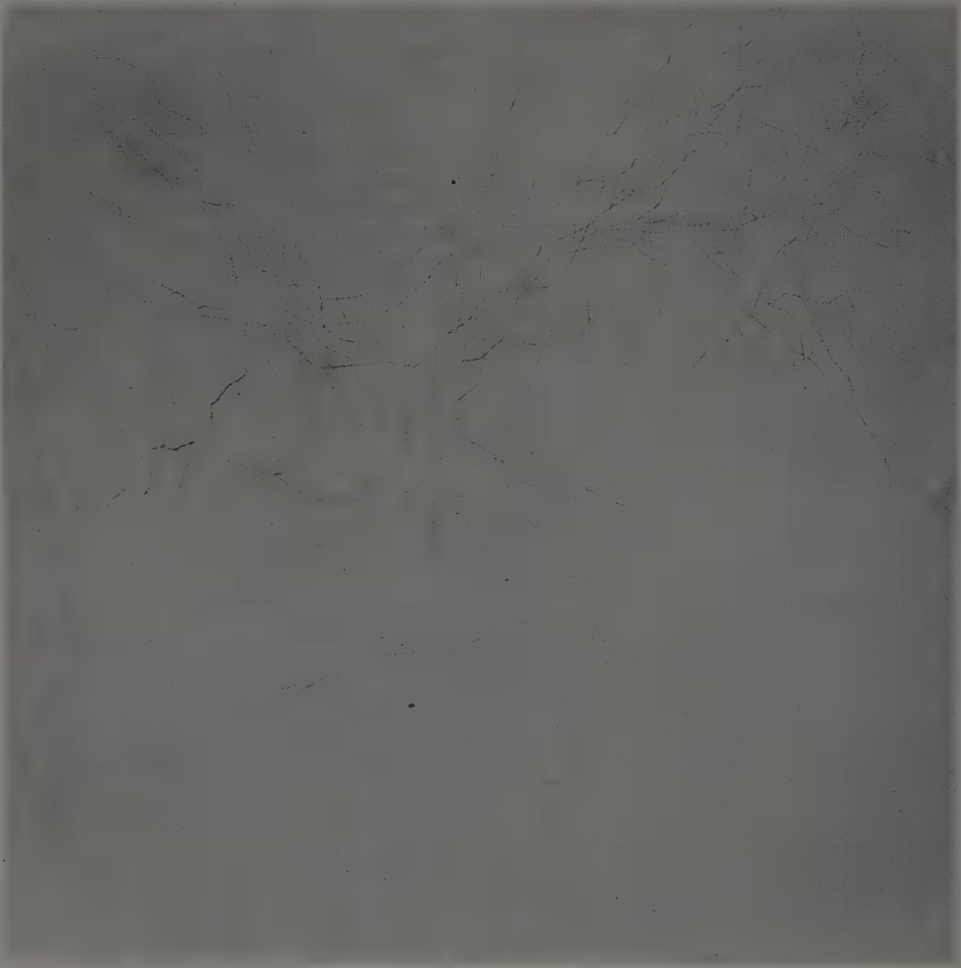
The dark-light effect of this reduced composition is reversed through different light reflections. The finely textured sections appear matter than the less worked material.

The three photographs give an insight into the simple working process by which tinfoil is manually worked and formed.



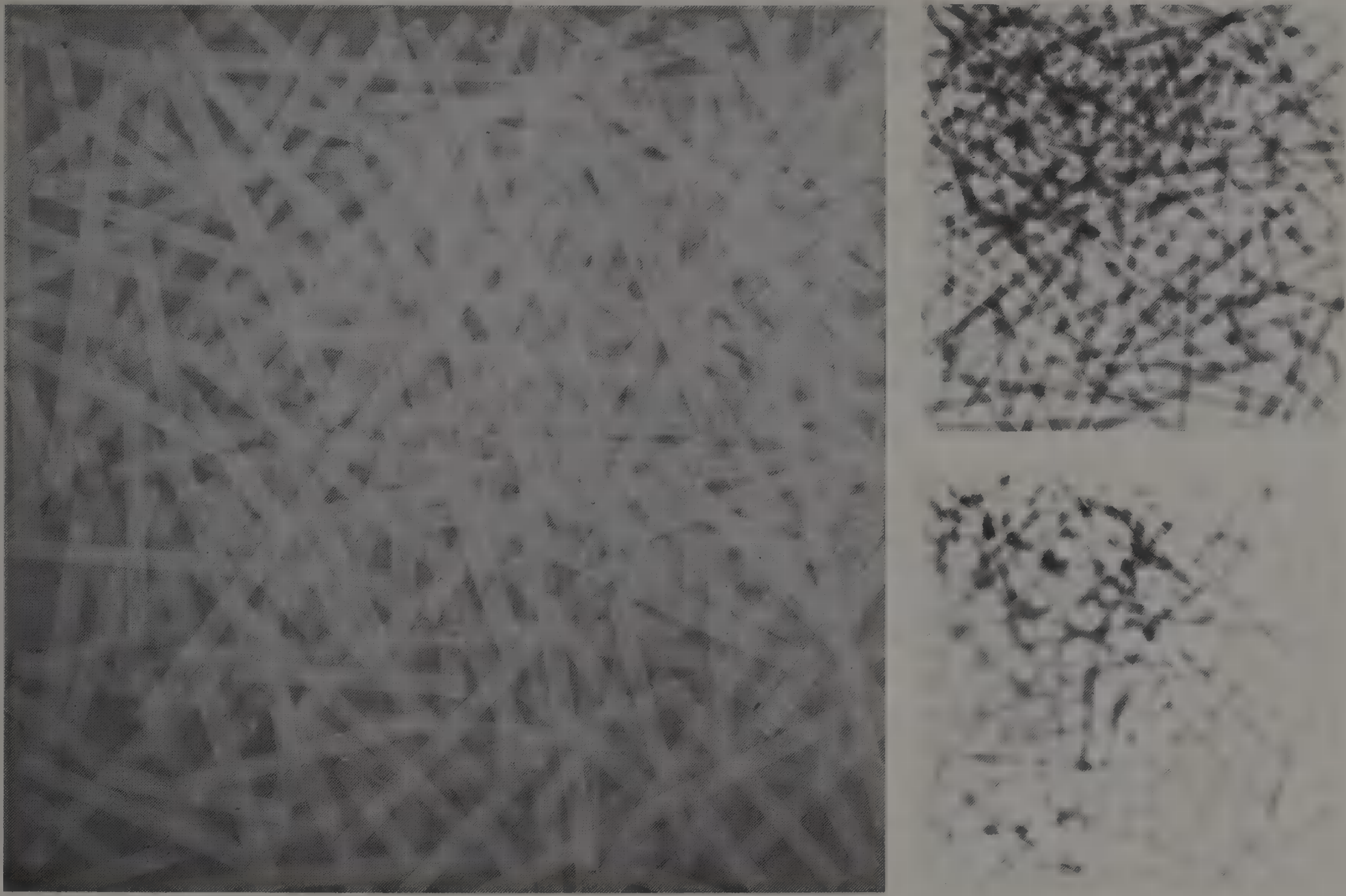


In the two examples of free, organic compositions the accompanying reductions appear different, although they are taken from the same original under different lighting conditions.



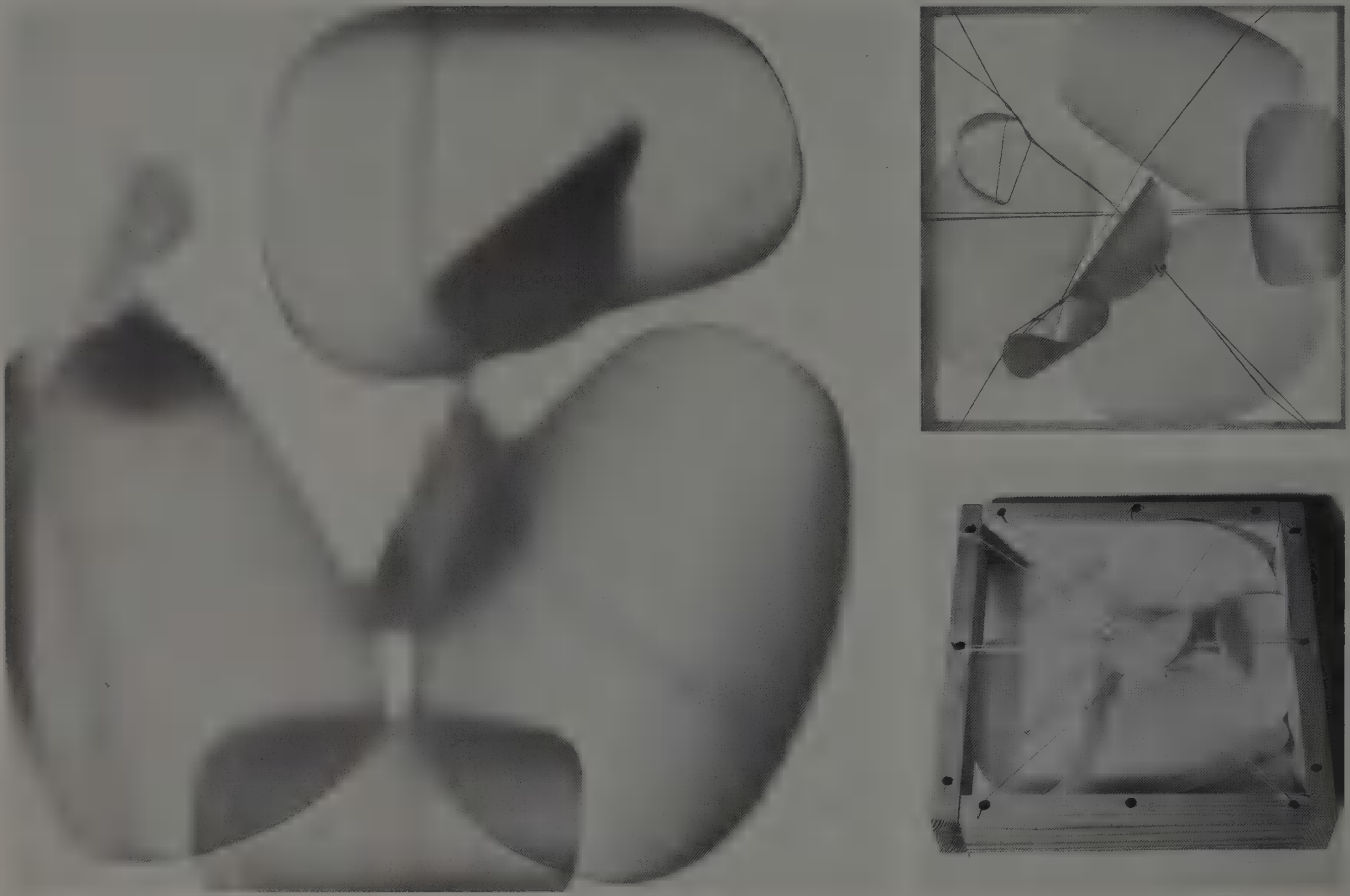
In the following exercise on the theme transparency the student must find a suitable material and corresponding working process. More than in the preceding exercises light is incorporated in different transparent effects. Many different materials are suited to this theme. In these exercises transparent paper is used in flat layers or in movable three-dimensional reliefs. Formal elements and differentiated gray values result from the various layers of material. The contrast between diffuse and clear forms must often be playfully discovered and consciously formulated.

The three examples show the same work, in which the surface of the tracing paper was scratched with a needle, against light, dark, and transparent backgrounds.

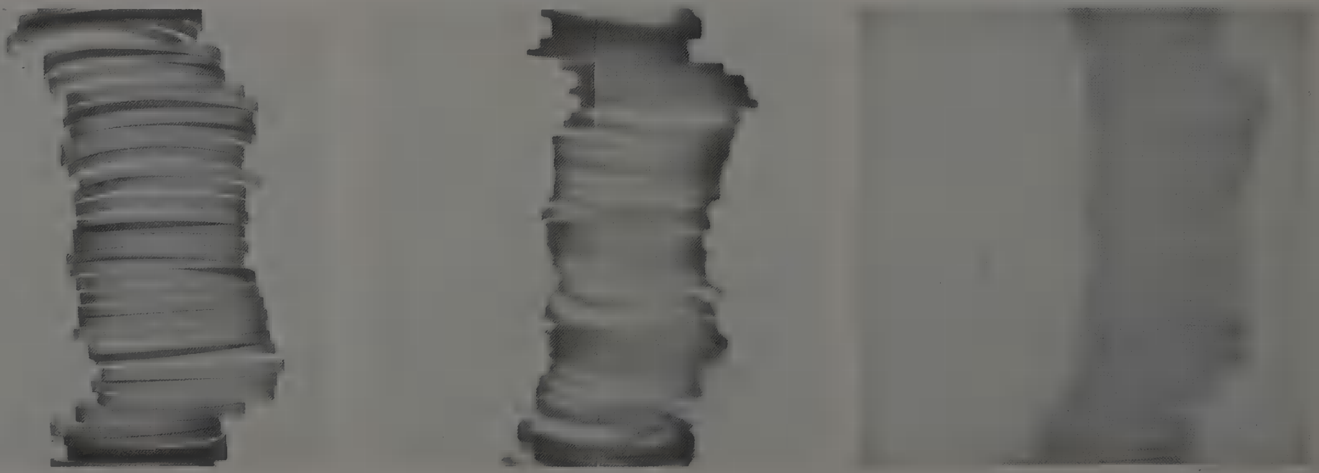


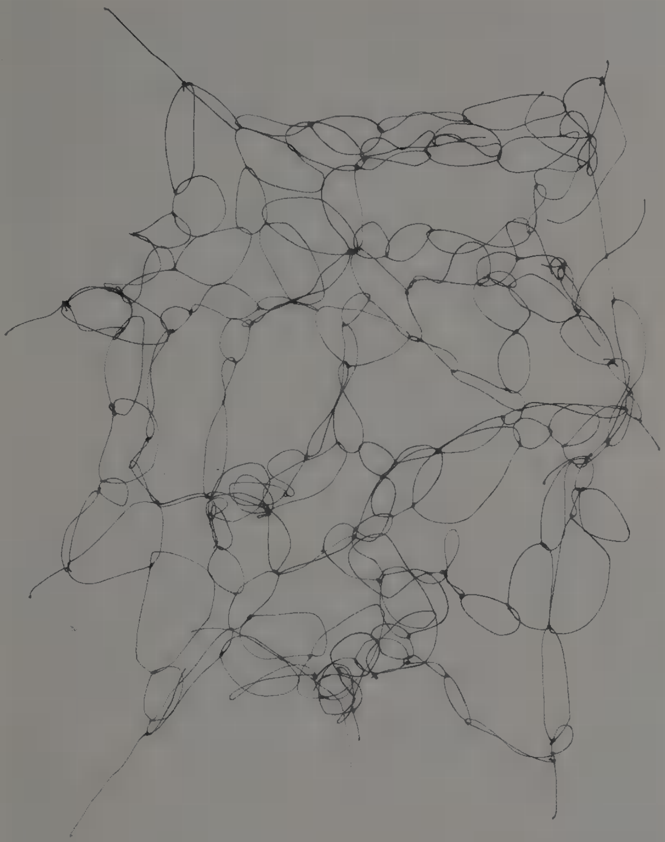
In this work the tracing paper is cut into strips, overlapped in layers, and mounted, resulting in differentiated gray values. The two accompanying pieces show other transparency effects.

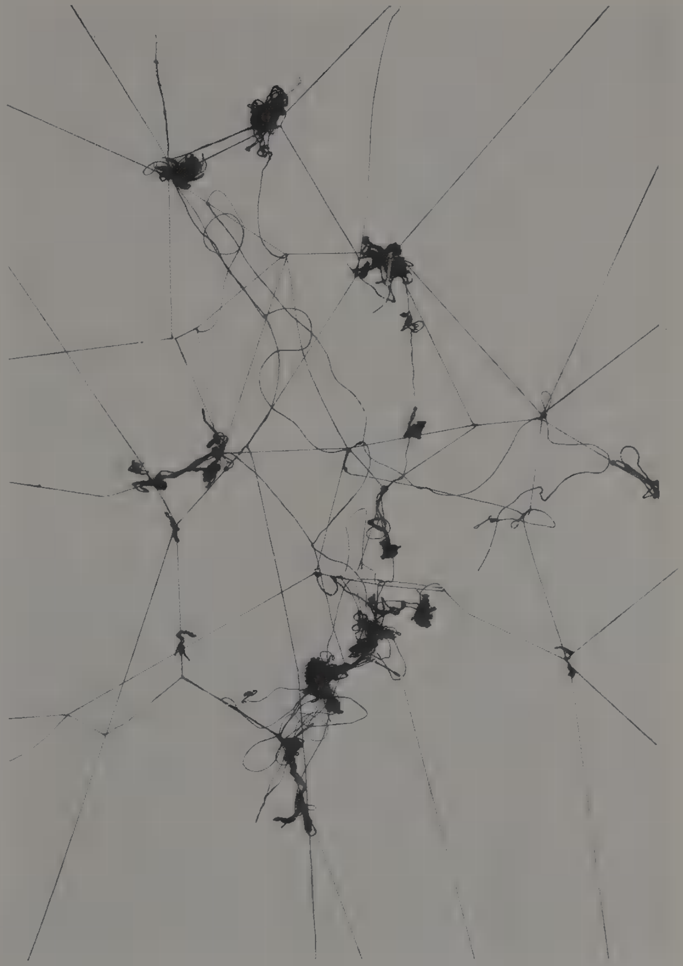
The teacher and the students are at work.



Two examples of three-dimensional work on the theme transparency. Above, pieces cut out of tracing paper are freely mounted in a wooden frame, and a layer of tracing paper is attached to the front side. The three photographs show the front and back views and the simple method of attaching the pieces to the back of the frame. Below, on the back of a piece of tracing paper fixed into a cardboard frame, a cylinder made from the same material is cut into segments and mounted. The individual rings, on the left, move from side to side; the other two examples show phases of movement with different diffusion effects from the front.

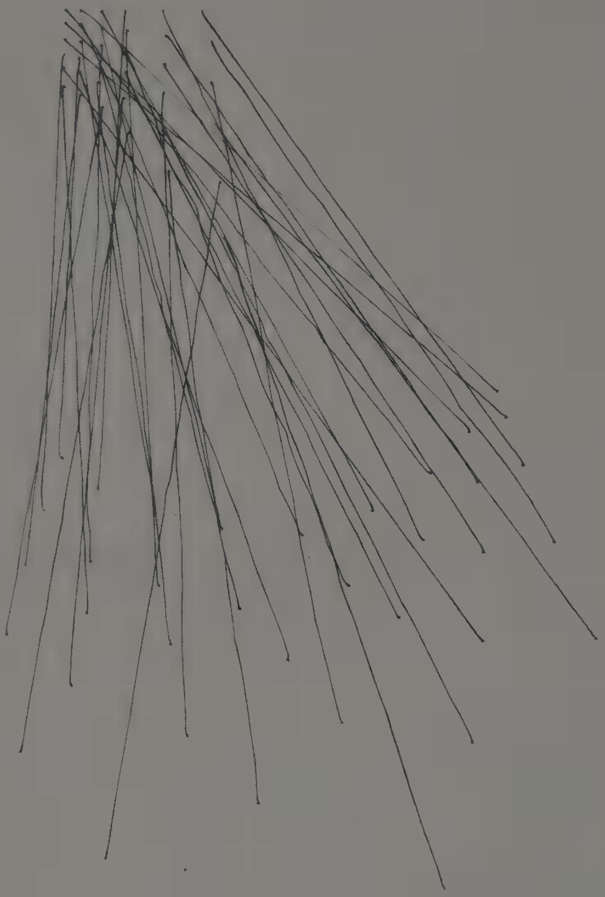


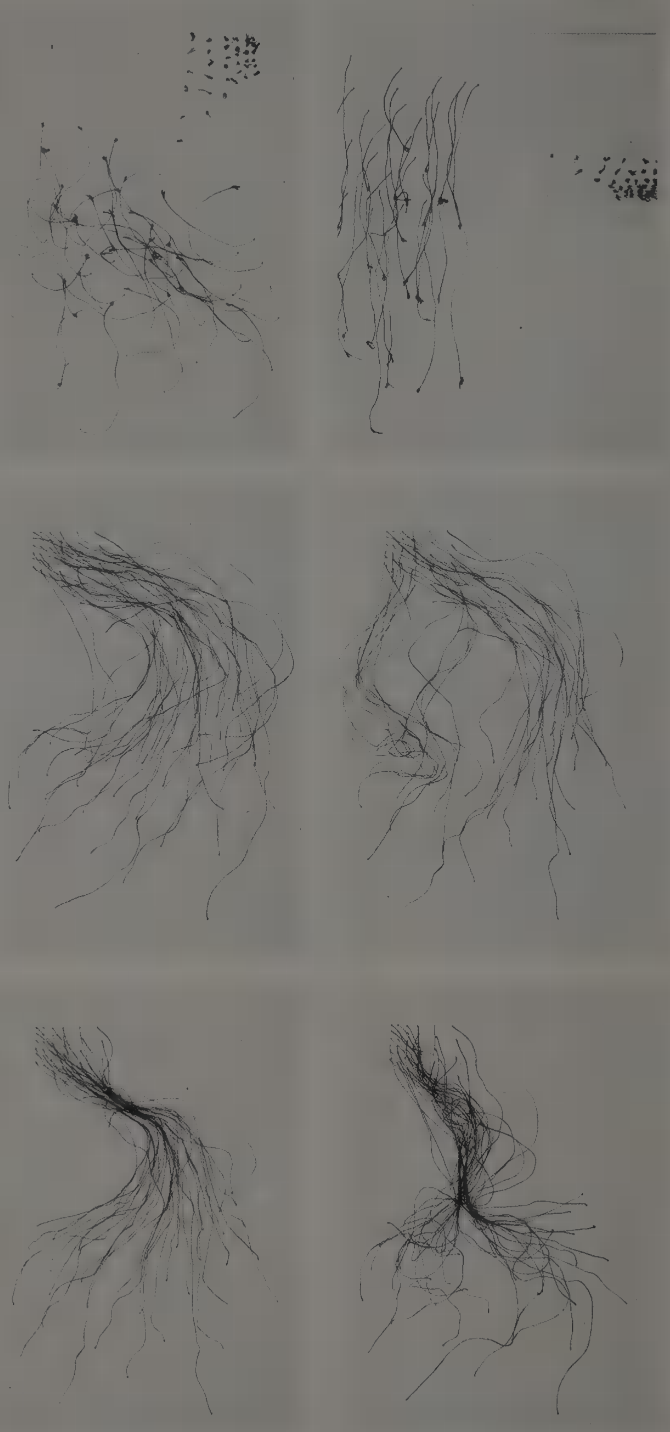




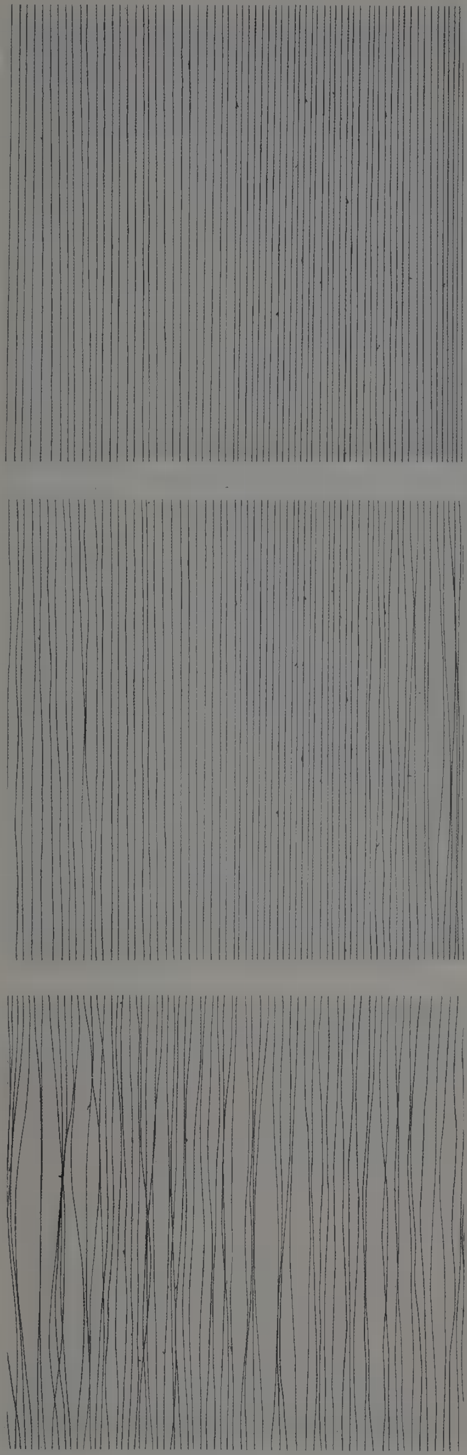
In contrast to the ordinary media of pencil, pen, and brush, a linear, graphic appearance is achieved with black thread on a white ground, or vice versa. Tonal-value exercises with white thread on a white background and black thread on a black background emphasize the characteristics of the textile material. Many unplanned possibilities, such as concentrations, repetitions, and mobile conceptions, are produced by spontaneous play with thread and other linear materials.

In these two examples looped and knotted threads are inserted at the edges of the cardboard and tied together on the back. The compositions, especially the negative spaces, can be changed by moving the bound threads on the back. In the study on the right concentrated accents are composed with contrasting tight and loose threads.

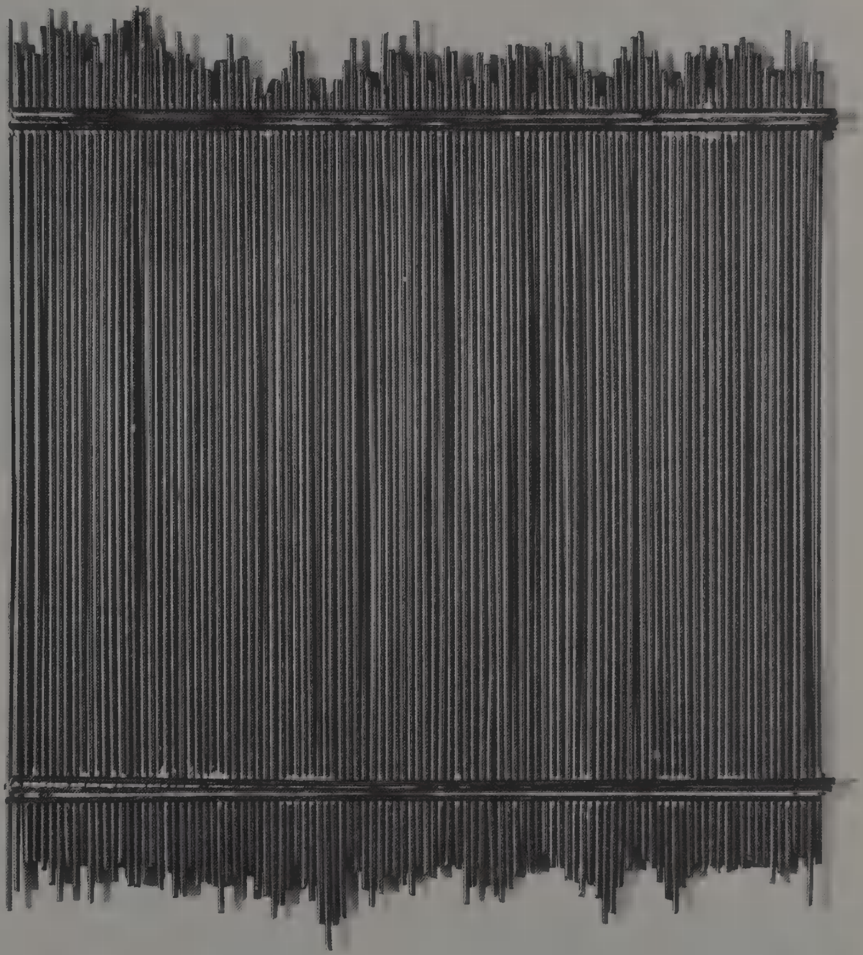




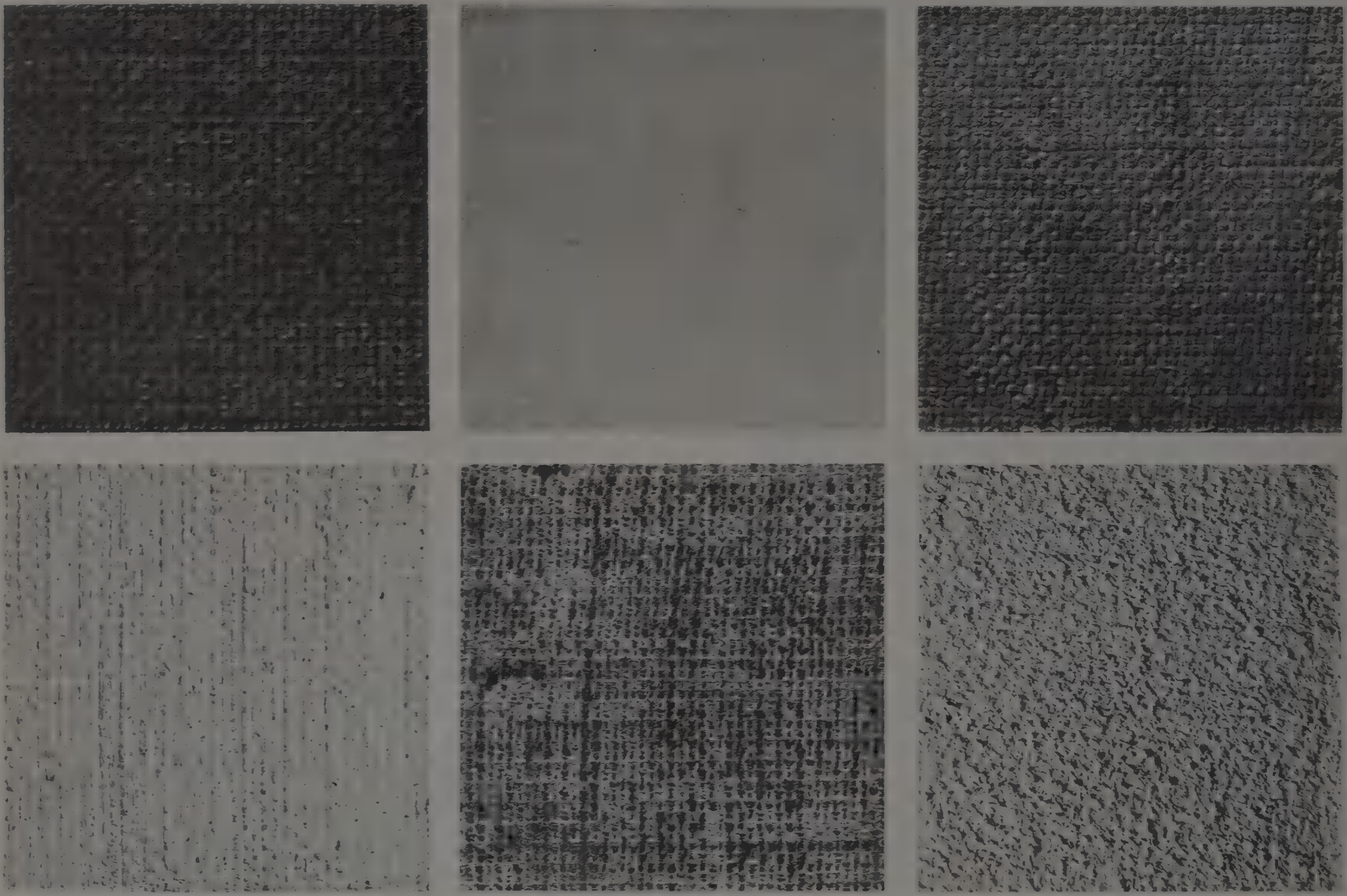
This composition shows radiating, partially overlapping threads that project from the upper left to the lower right. The threads are pulled through holes in the cardboard and knotted at different lengths, as in the two small examples at the top. The other four examples show how the basic composition can be changed by moving the threads on the front surface.



Compositions with vertically arranged threads can be altered by shifting the threads sideways.



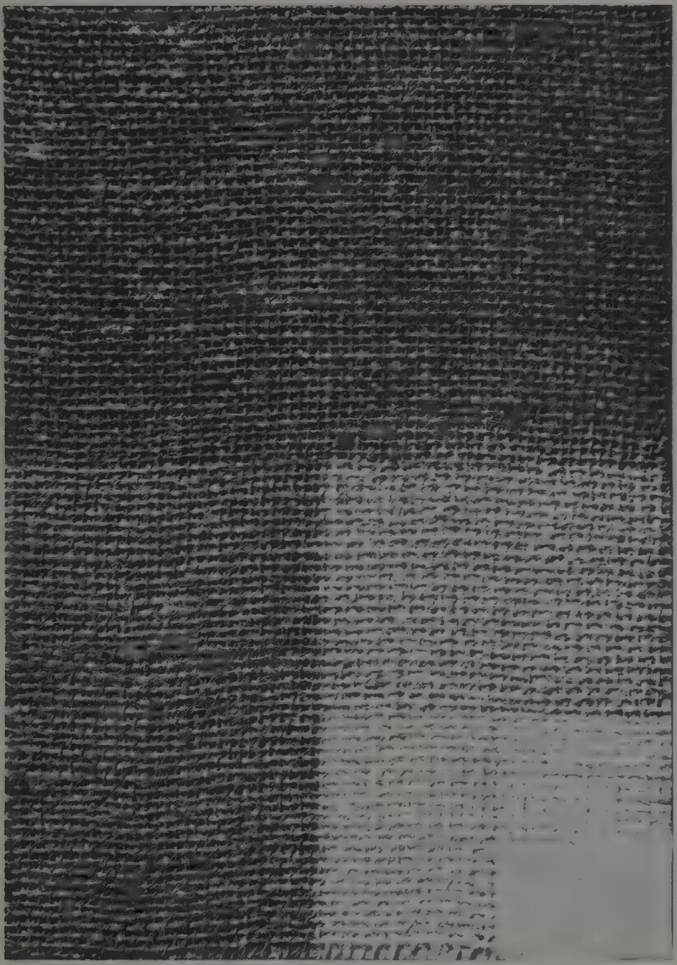
Soldered rods form a compact, linear mass.



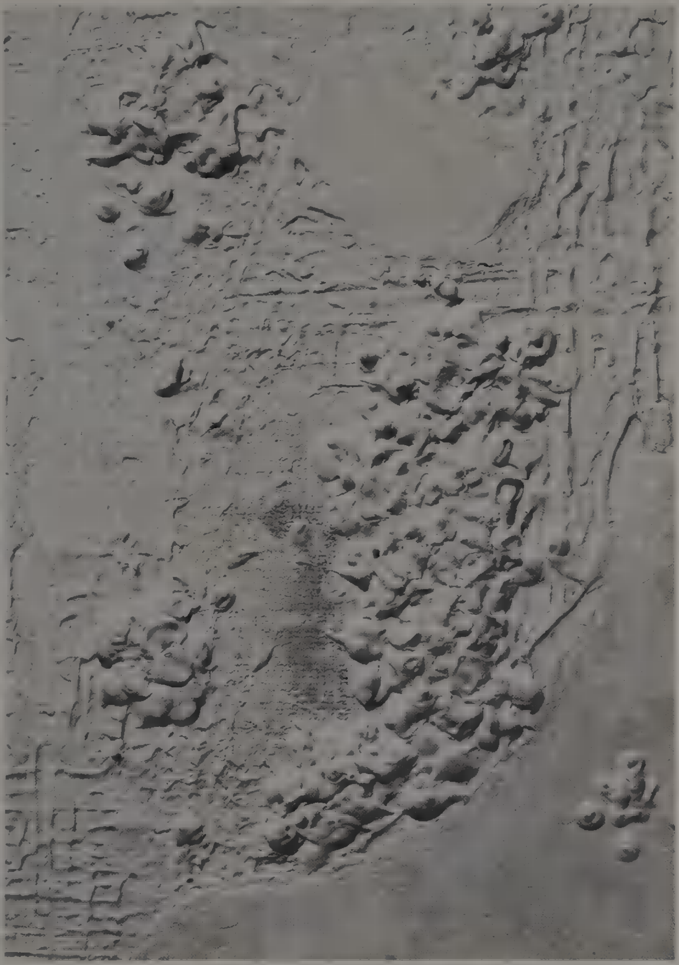
In this course color is investigated in terms of its material characteristics. ■ is investigated in monochromatic exercises as a material in pigment form. Instead of oil paint white latex paint and binder are used, as they dry and harden quickly. Prepared burlap is divided into sections and serves as the ground. In order to compare the original character of the burlap, one area is left unworked. The paint is applied in different quantities with bristle brushes and spatulas, using various techniques on the remaining surfaces. The surfaces should be essentially, optically, and tactilely differentiated. After drying sections can be changed with sandpaper.

The first example, at upper left, is natural burlap. The remaining five examples show different surface treatments.

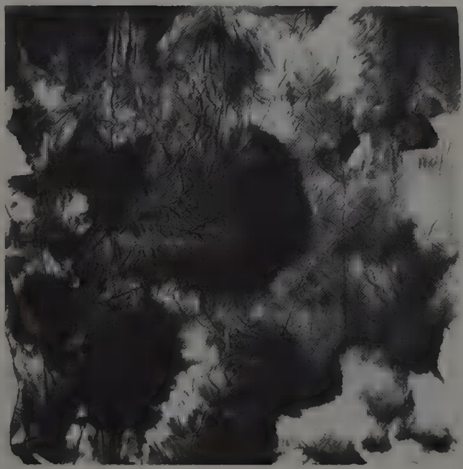
The examples on the theme fluidity show differentiated effects of the paint material. Dark colors with a fluid consistency are applied to different partially wet papers.

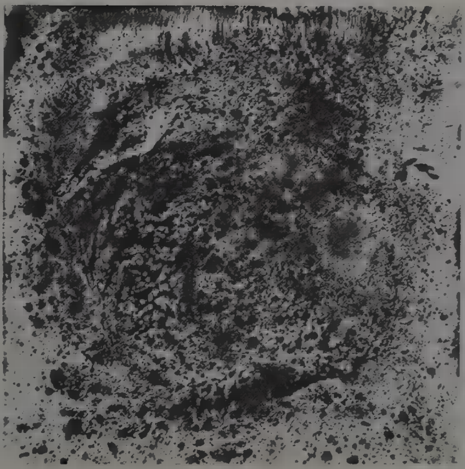


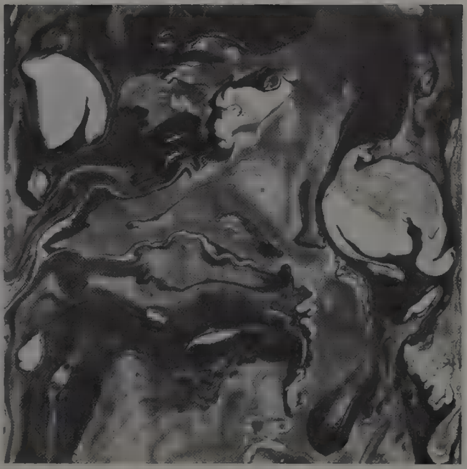
This composition shows horizontal-vertical divisions from the diagonal and the progression of color densities to the lower-right corner. The last and smallest rectangular surface was scraped and sanded smooth.

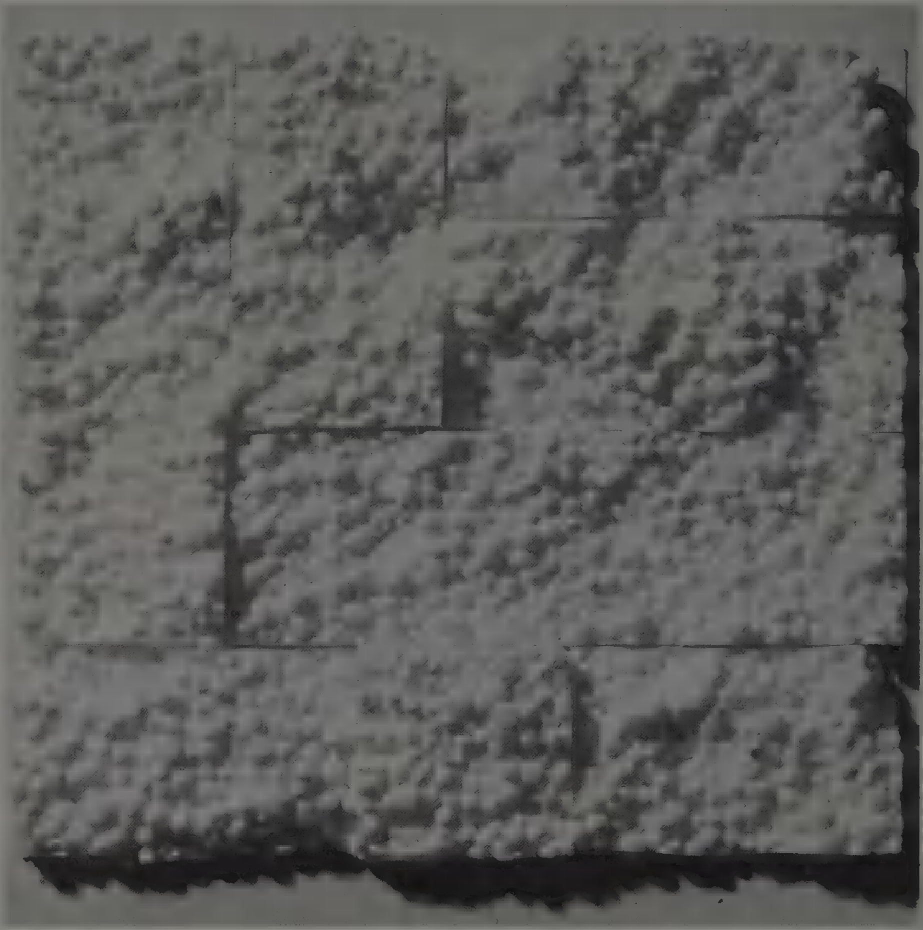


In contrast to the above organized, geometric exercise, a free, organic composition with expressive forms results from spontaneous but controlled actions.



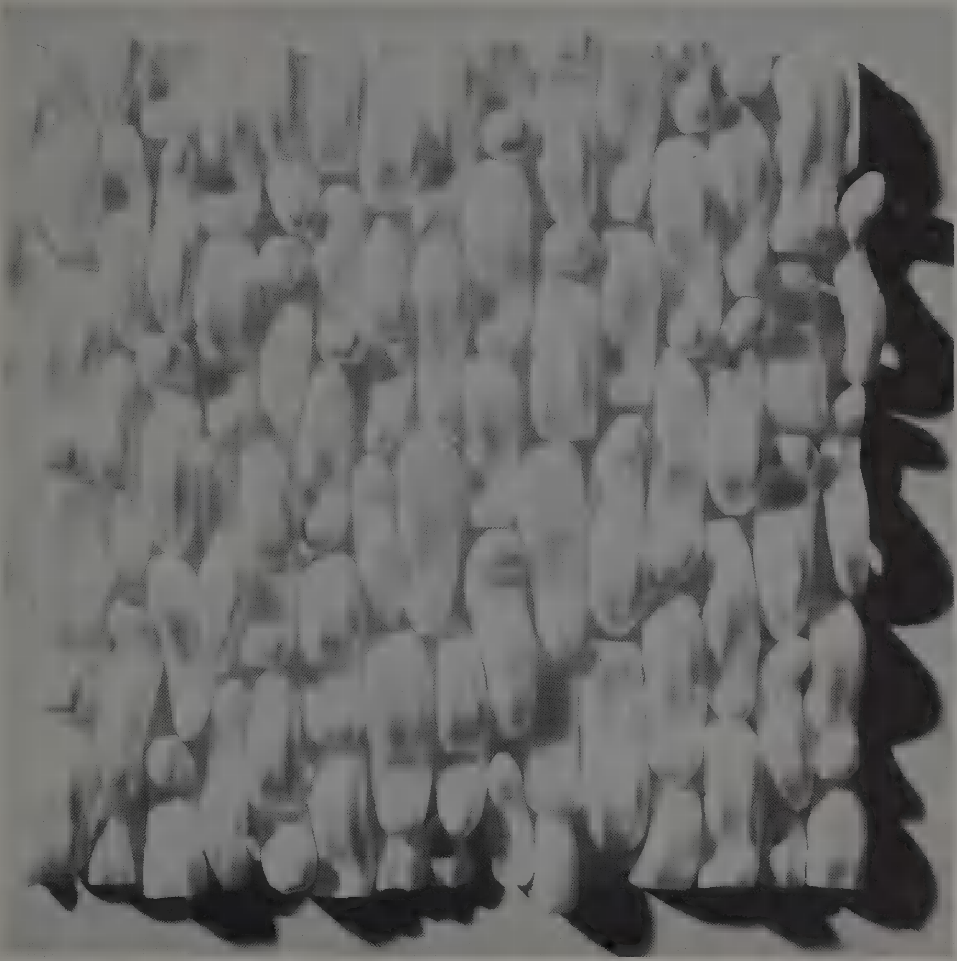




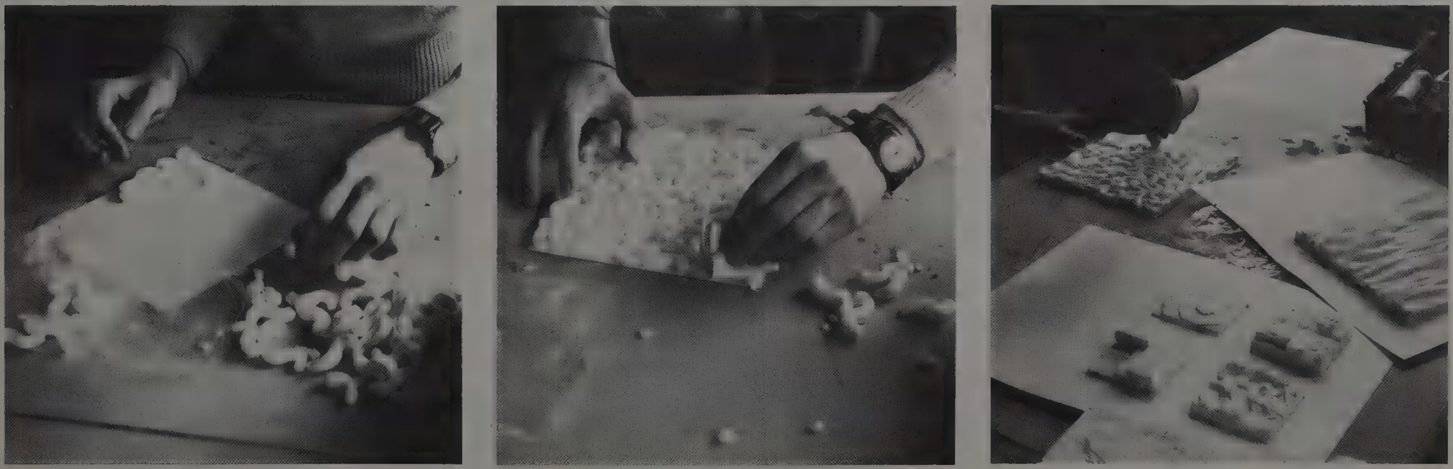


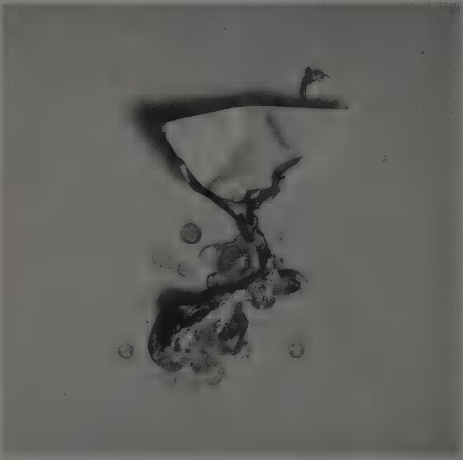
In connection to color as a material the investigation is expanded through exercises with monochromatic, white styrofoam, a prefabricated packing material. These combinations and compositions are unrelated to its original function. The material is manipulated through breaking, cutting, and layering.

The illustrations show, at top left, styrofoam beads glued in different densities on rectangular pieces; top right, pressed elements glued in a relieflike fashion in rhythmically free rows.



The three photographs demonstrate the simple working process with styrofoam.





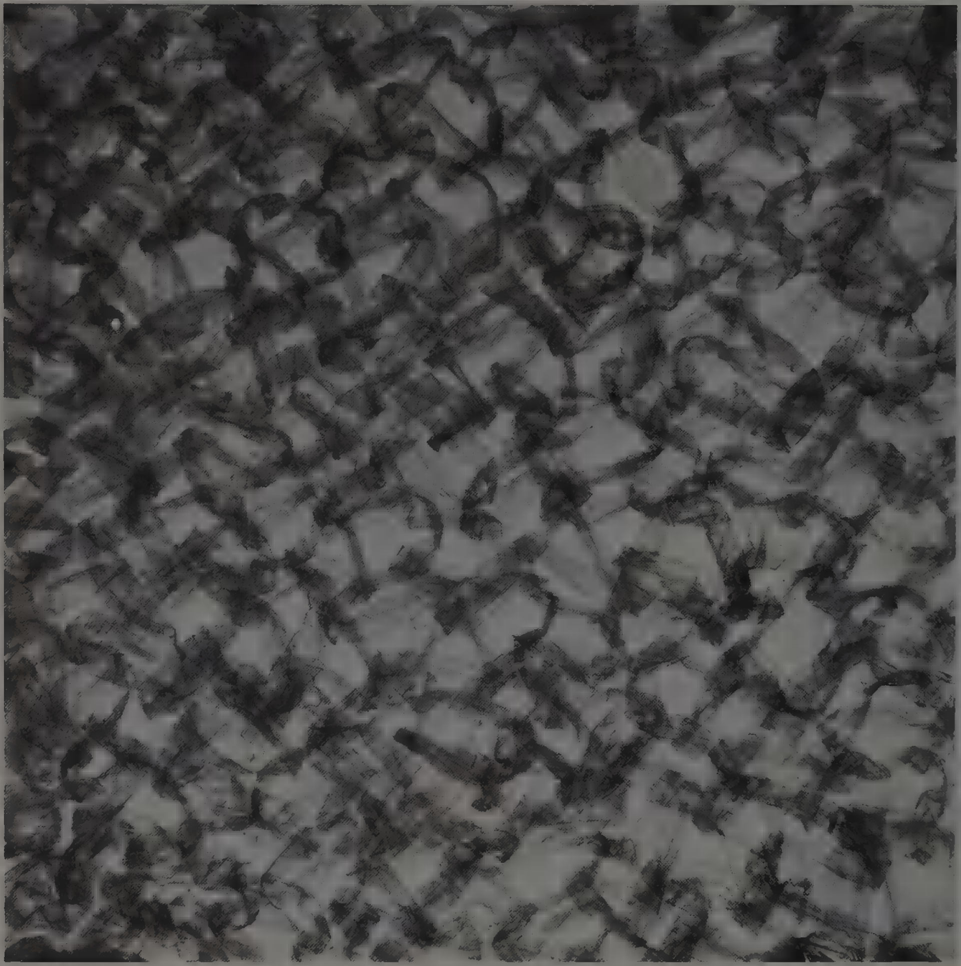
Creative possibilities, unburdened by tradition, are produced from a spontaneous confrontation with PVC plastic, a modern industrial product. This material is reflective, smooth, tough, flexible, and translucent. It permits numerous treatments such as folding, bending, layering, tearing, cutting, heating, burning, and stretching.

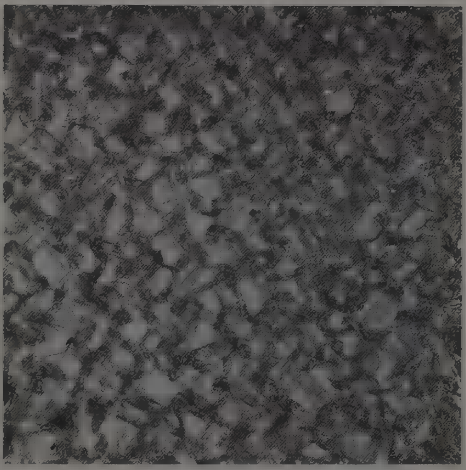
Three elementary examples are produced by heating and crumpling, tearing and folding, and burning the material. The four examples on the right show the methods used on a sheet of folded black plastic. Different effects are produced through various light treatments.

Further exercises on the theme transparency supplement and expand the results achieved with tracing paper. The studies shown here were done with transparent plastic. The students are free to choose their own materials and working methods.

In the following example folded strips of plastic are looped like textiles. The thickness of the material and the looping produce a gradual differentiated effect through the transparency and surface reflections of various lights.

The examples on the right-hand page show, above, plastic scratched, partially torn with a sharp object (nail, needle, or knife), and placed on a light and a dark background; below, overlapping layers of scrumpled plastic under different lights.

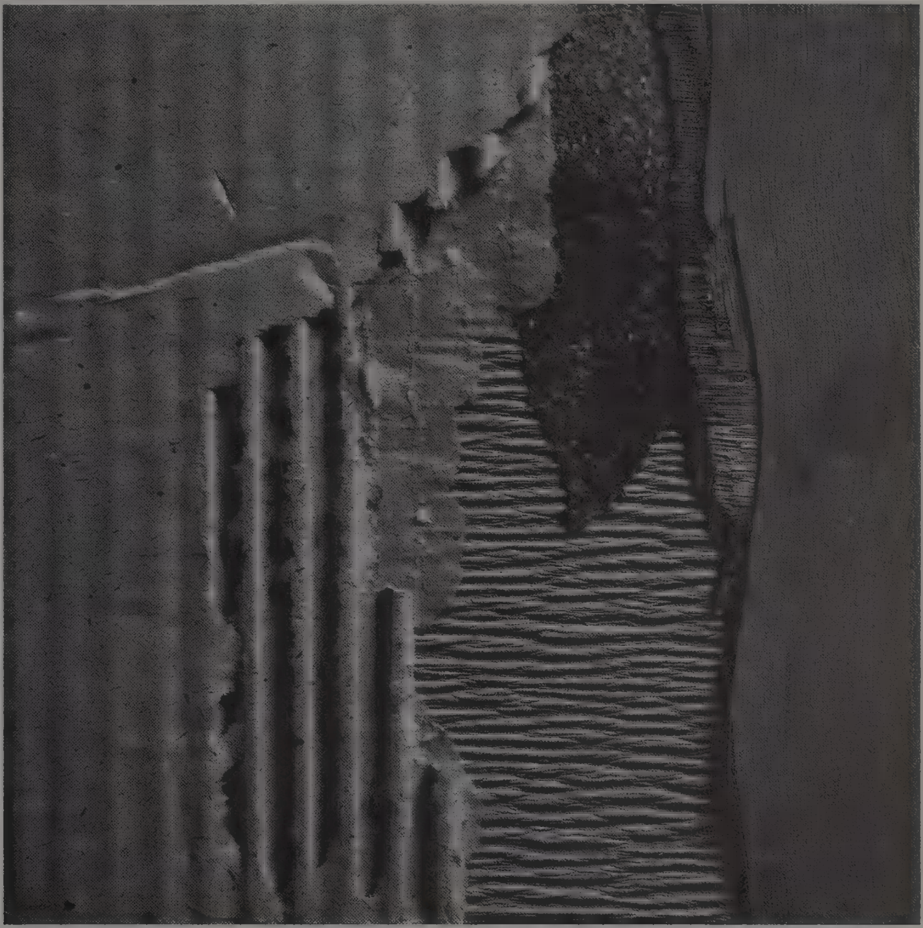




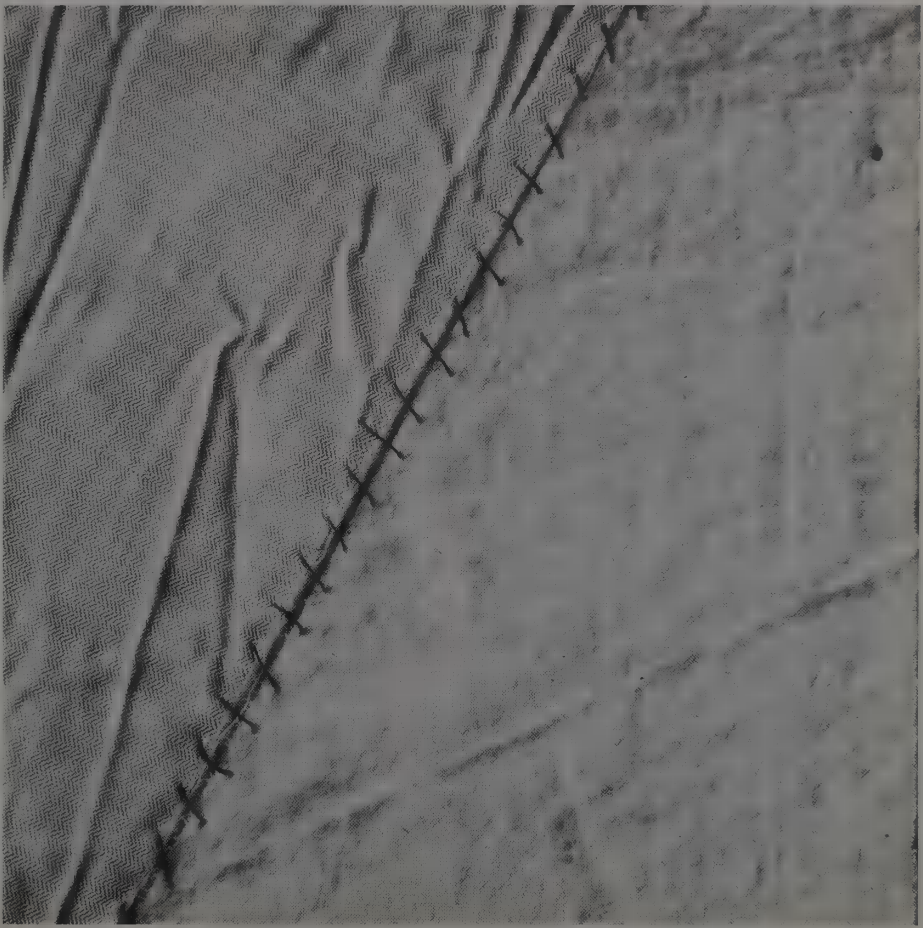
Holes are burned into the folded, overlapped plastic layers. The three examples show the same work under different illuminations against a dark background. The reflections almost disappear when a counter light is used.

Raw materials are cut and worked under simple conditions.

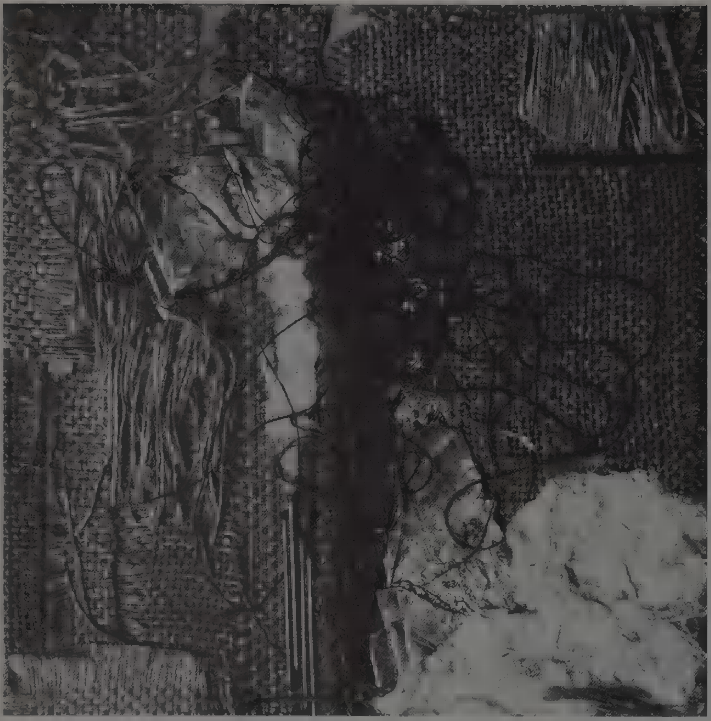
The pictures here and on the following two pages show exercises on the theme combinations of diverse materials into a new unity. This theme occurs consciously in our everyday lives—for example, in clothing. Numerous unforeseeable optical and tactile combinations and compositions are produced through the free selection of materials and techniques. The experience from the previous exercises with themes such as matte-shinny, color as material, etc., is integrated in this problem situation.

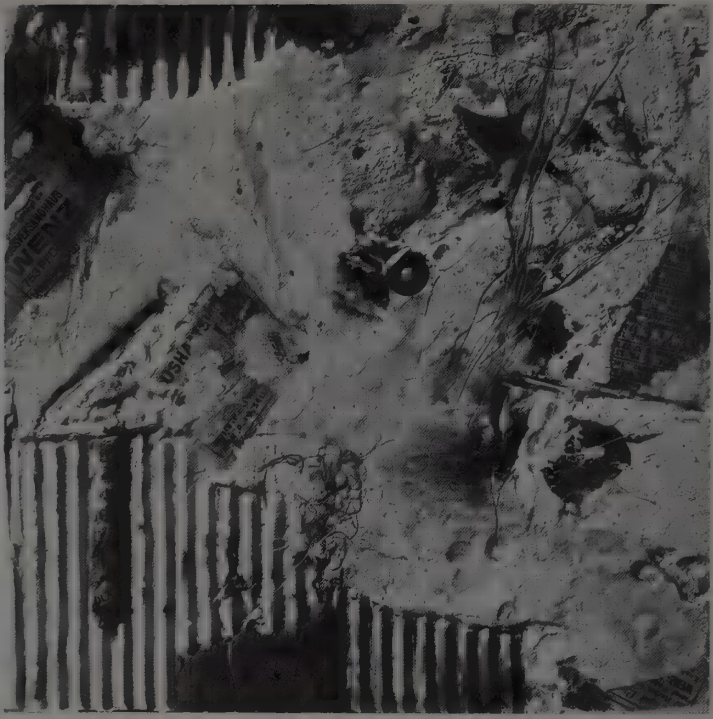


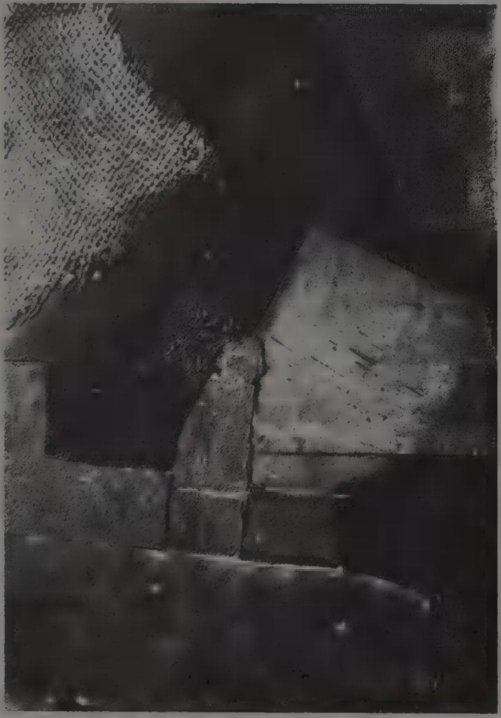
Corrugated cardboard, crepe packing paper, roofing felt, and plywood are combined in this horizontally-vertically textured composition by tearing and breaking the materials.

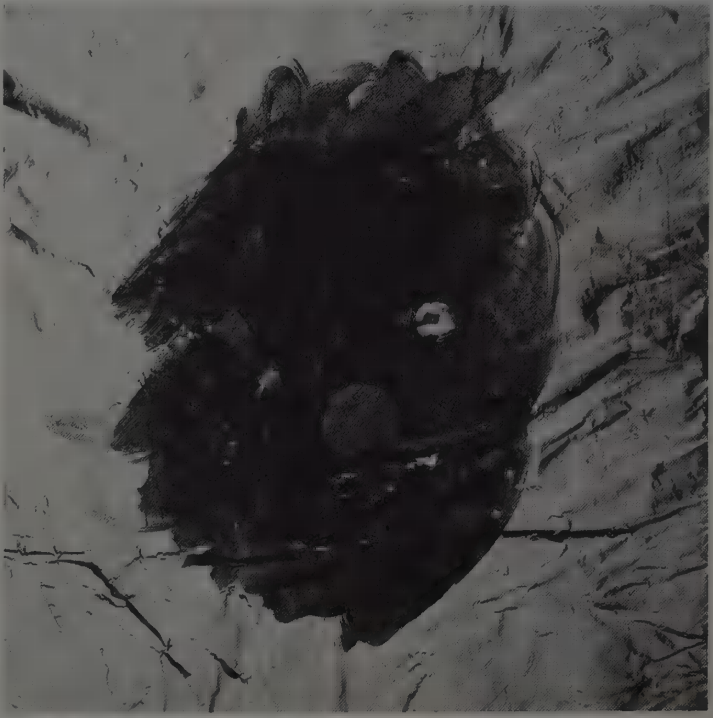


Two different textiles are joined through sowing. The dominant diagonal is balanced by the counter-movement of the threads.





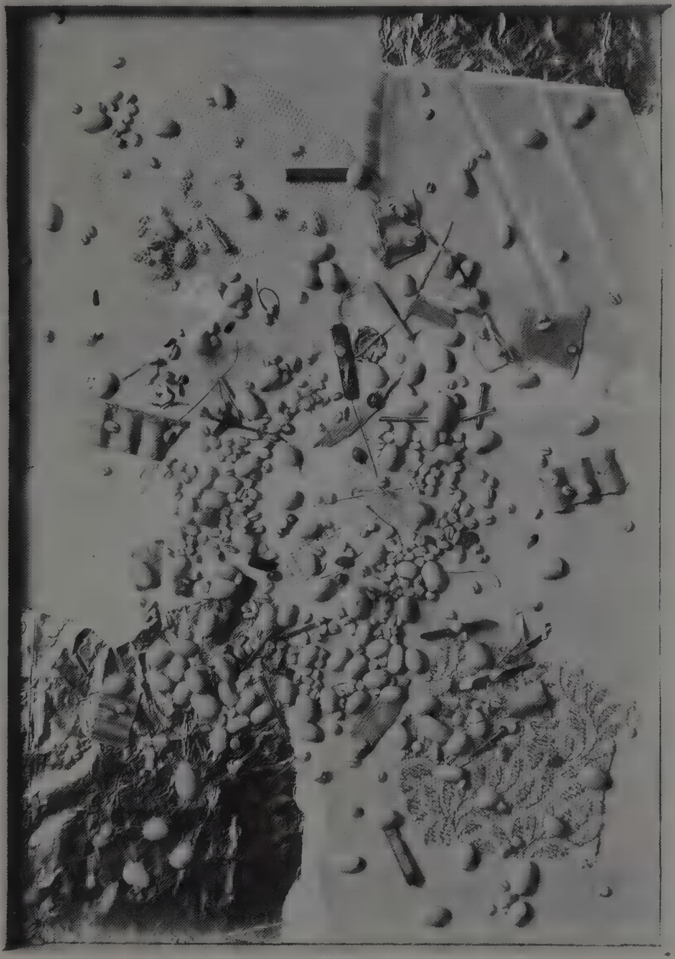


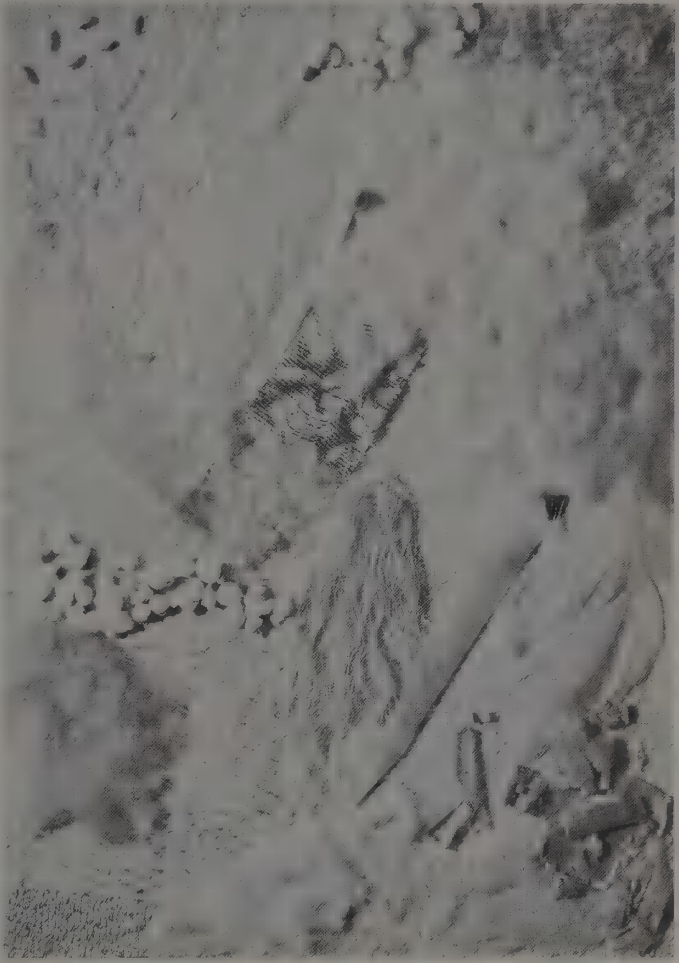


Above left is a composition utilizing dark, freely looped and twisted threads; partially frayed burlap; and nails.

Below are two collagelike compositions: left, pieces of metal, burlap, paper, cardboard, and leather; right, with the contrast matte-shinny combinations of metal, wire, and tinfoil painted with dull colors.

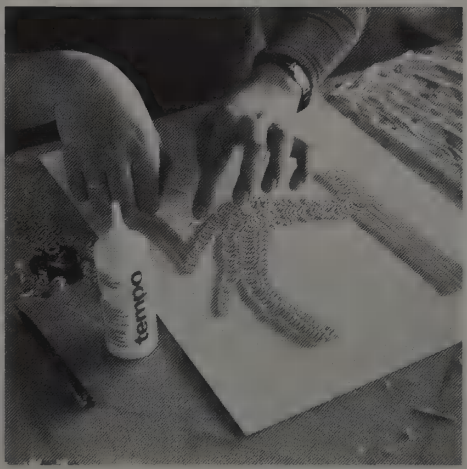
Above right, pieces of newspaper, tacks, plaster, paint, and a cigarette butt are combined to contrast with the rhythmic, vertical texture of the corrugated cardboard.

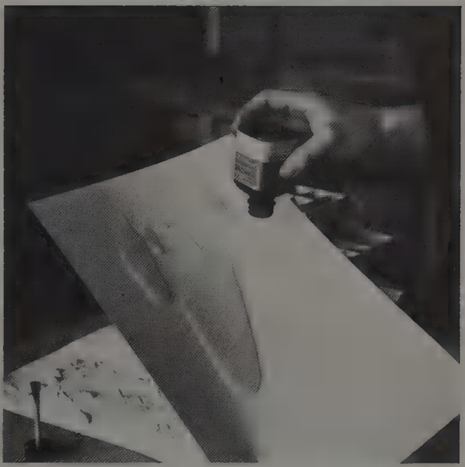


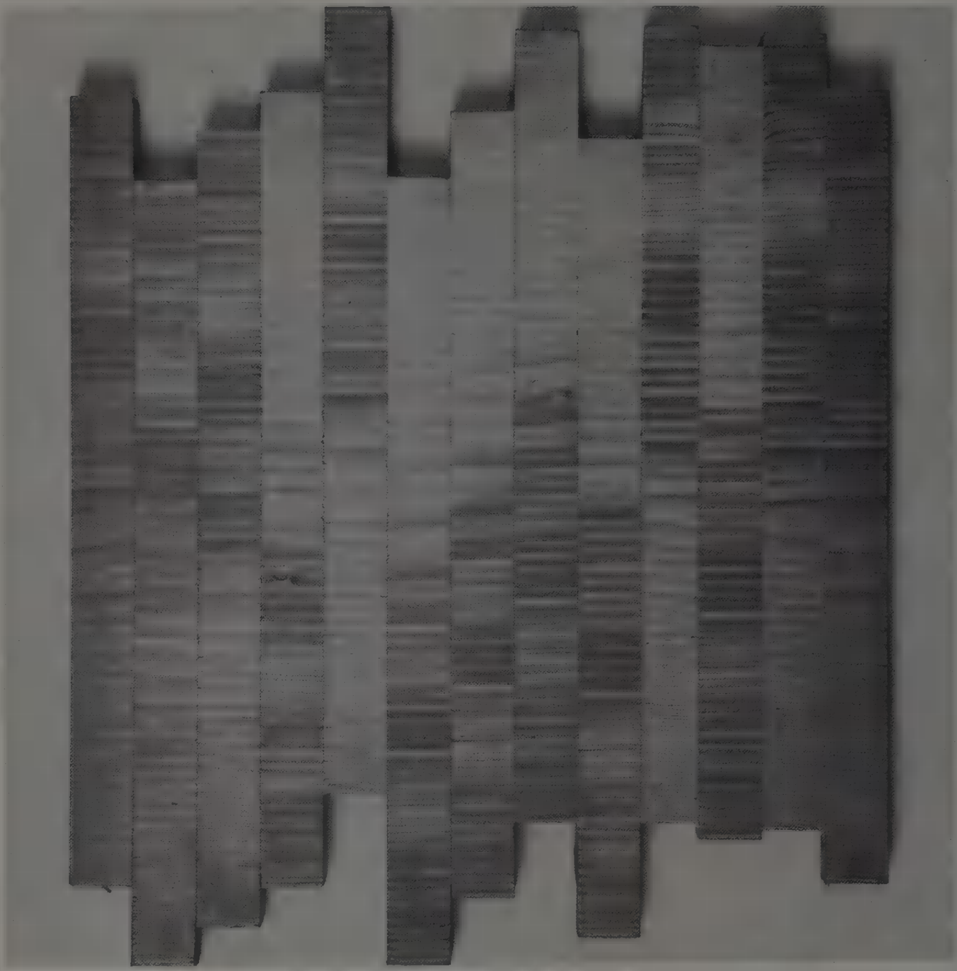


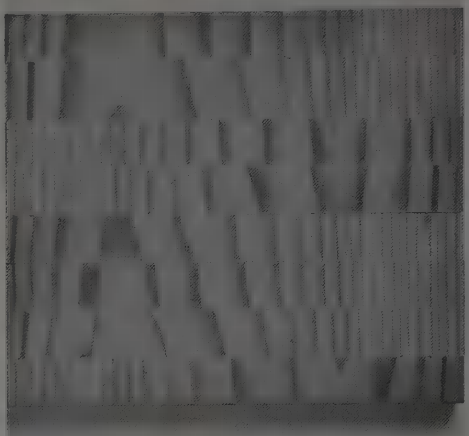
In these two examples the appearance of the materials is primary and clarified through subtle tonal values. Beans, textiles, papers, acetate, nails, feathers, and metal type are used.

The photographs show students at work with paper, plastic, drinking straws, and liquid candle wax.





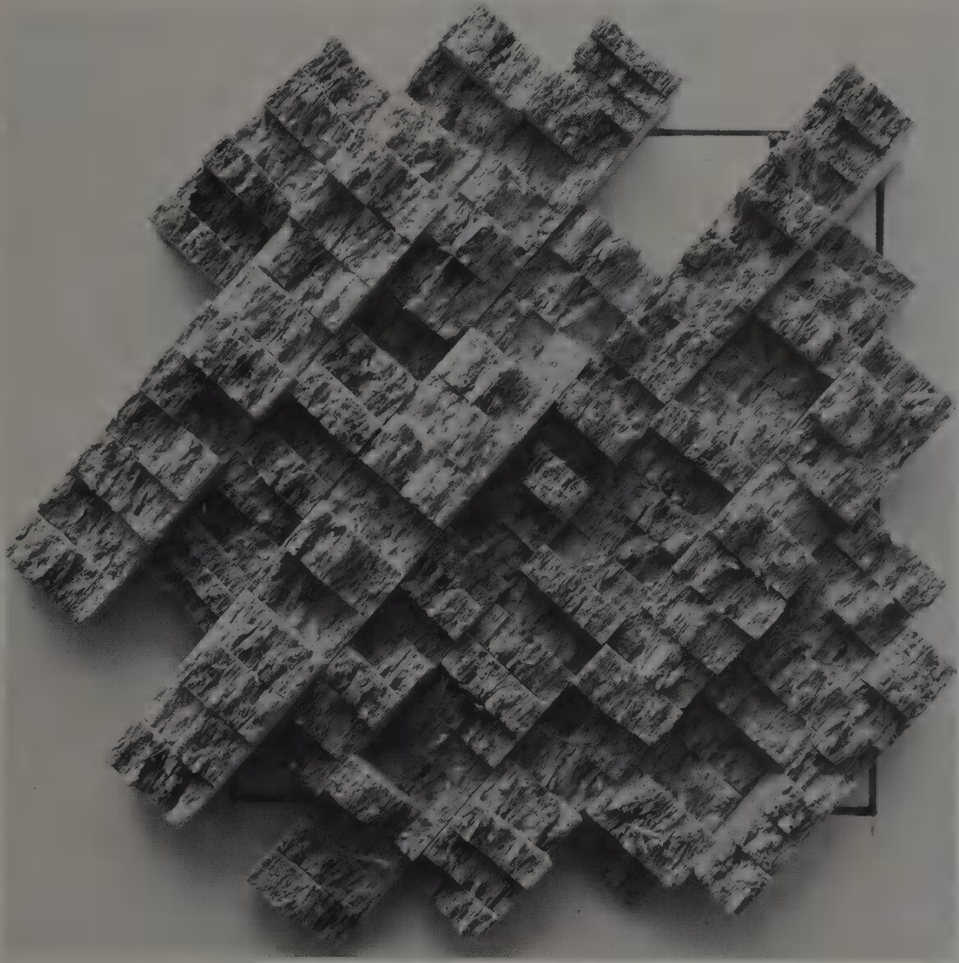


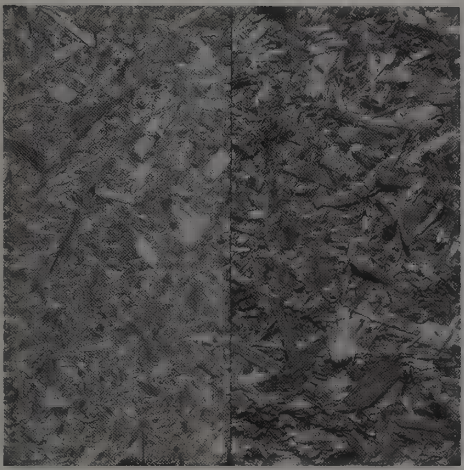


Wood offers abundant stimulation and can be manipulated into many different forms by planing, sawing, splitting, burning, and polishing.

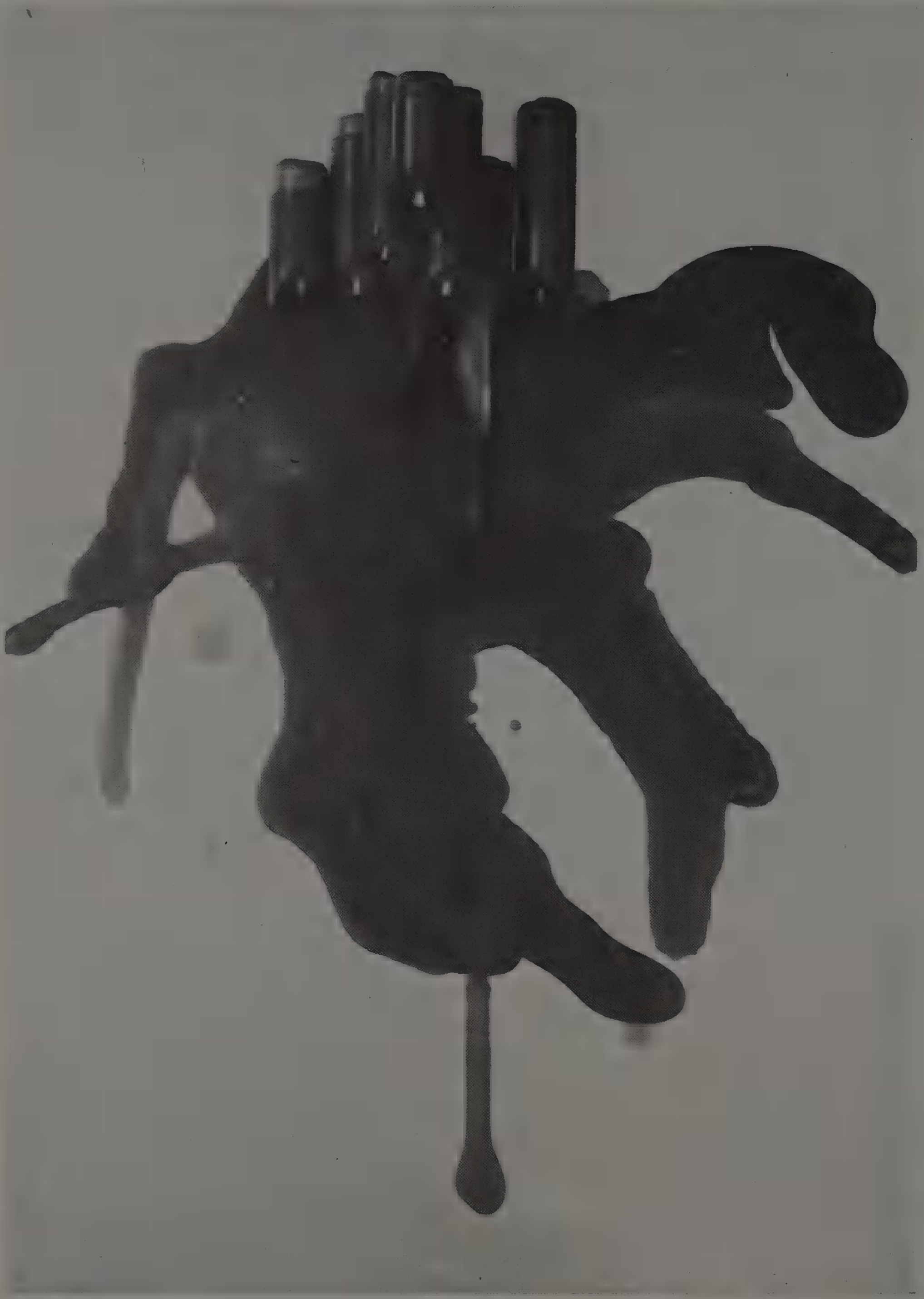
In the above three examples a piece of wood is cut into uniform pieces, shifted, interchanged, and combined. The grain structure produces an interesting graphic rhythm.

The three examples show different effects achieved from simple working techniques with pieces of compression board.





Above, disposable veneered wood, with a natural defect, is laminated and mounted as a relief; center, split pieces of wood are diagonally mounted in a frame; below, decaying pieces of wood are worked into a compact composition.

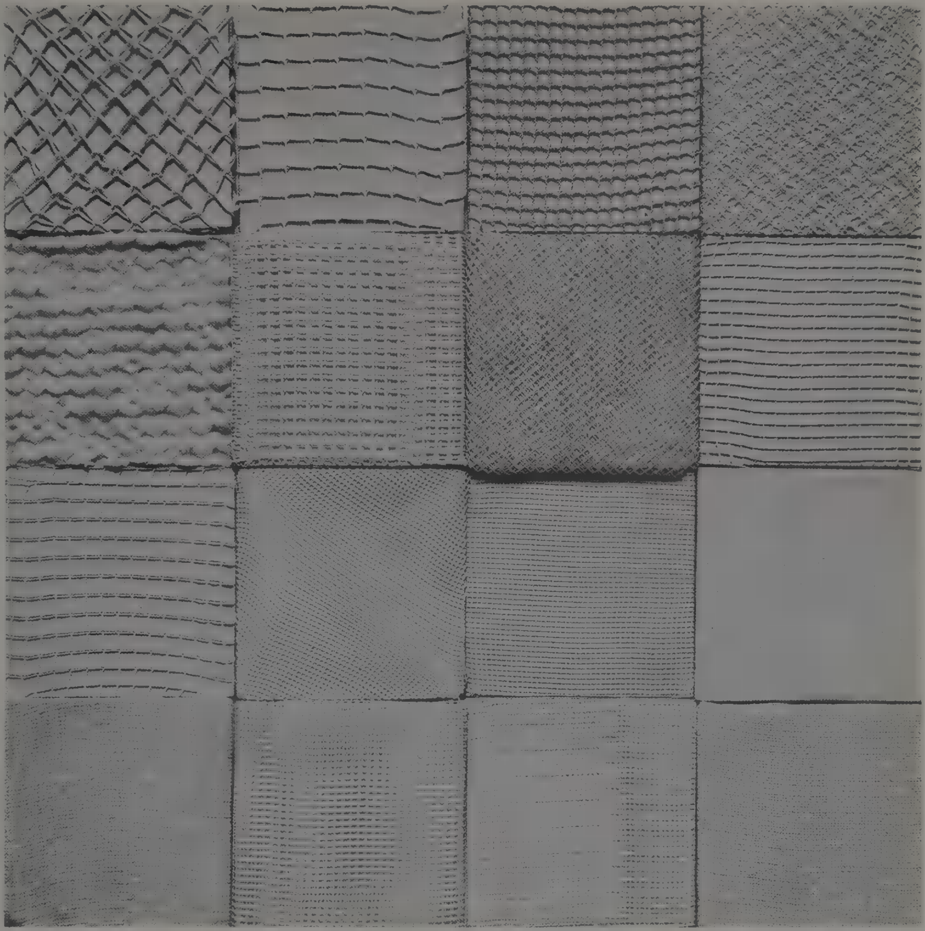


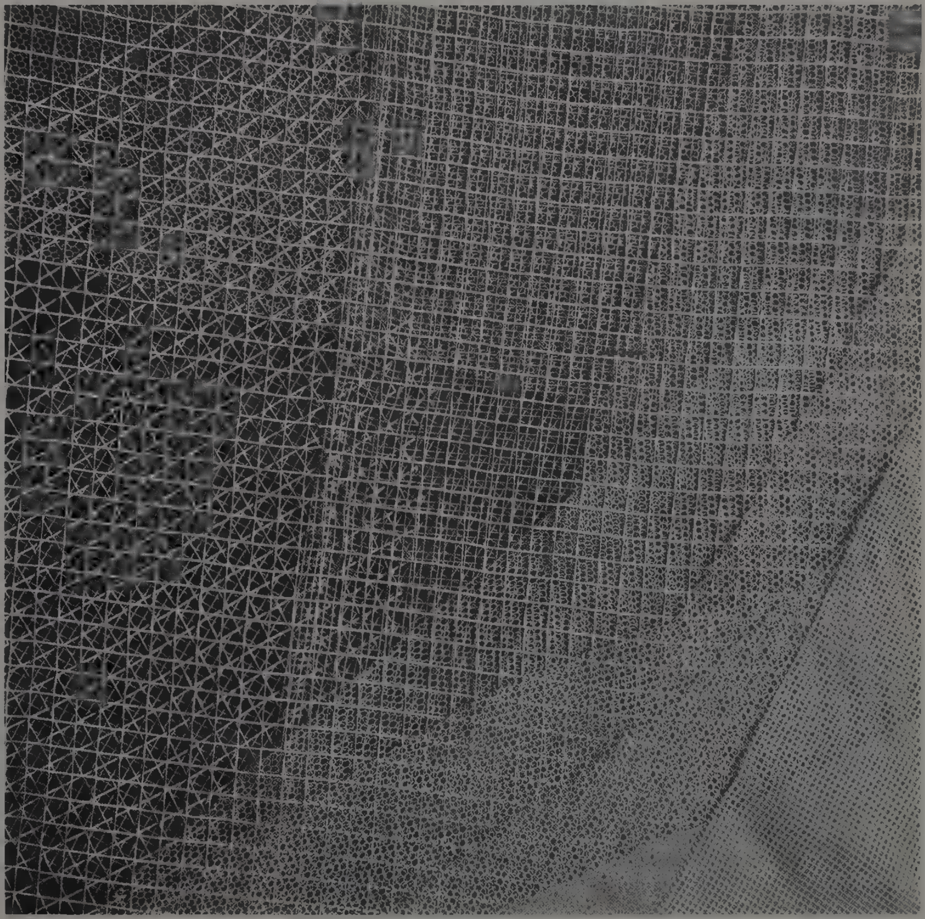
In exercises on the theme fluidity students must find the appropriate working means, raw materials, and compositions on different bases. Some choices are: water-color paper, textiles, colorless liquids, and watery, oily materials of all kinds. Controlling chance necessitates extremely alert and quick reactions.

The working process is visible in the above example of flowing candle wax on an aluminum surface.

The knowledge of textiles acquired by the students in previous handicraft courses is minimal, usually limited to the reproduction of decorative objects in which the technique is used to define the object and not as a creative medium.

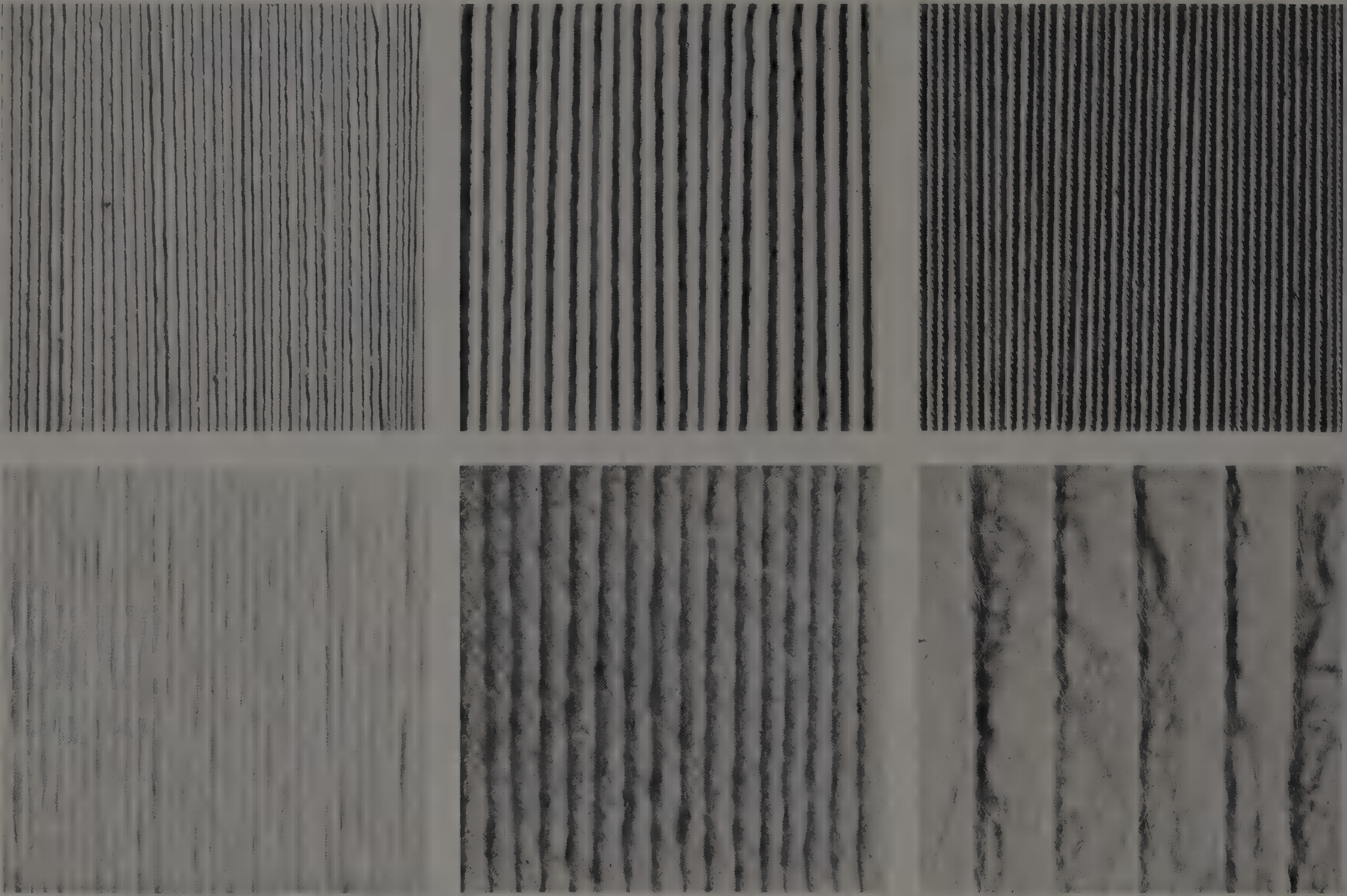
The aim of this course is to discover expressive rhythmical qualities of various textile materials; the interrelation of texture, color, and form; and the adequate techniques. Particular techniques (embroidery, weaving, knotting, macramè, looping, tie-dyeing, appliqué) are studied by working with the appropriate equipment: simple tools, wedged frames, and improvised dyebaths. The course is not structured towards a theoretical and systematic study of textile technology: techniques are used as practical media in the design process and as means of individual expression. Through spontaneous experimentation with simple instruments (needles, reamers, scissors, and knives) possibilities of manipulating materials and procedures are investigated to the point of distortion. The wide selection of materials includes more than a thousand colors and dozens of different qualities, from expensive silk to burlap and disposables. The abundance of raw materials, their characteristics, and design principles discovered in preliminary exercises, provide a basis for independent design decisions concerning choices of material and method. Possible solutions, based on the interrelationship of texture, color, form, and material, are also investigated. During each exercise material samples are done, and possible design variations are worked out. They are compared and evaluated, and the most successful variations are chosen for further development. The final results are also discussed and evaluated, and the understanding and experience gained through this working process further each student's manual ability, optical and tactile sensitivity, independent judgment on design principles, and facility in relating these principles to material and technique.





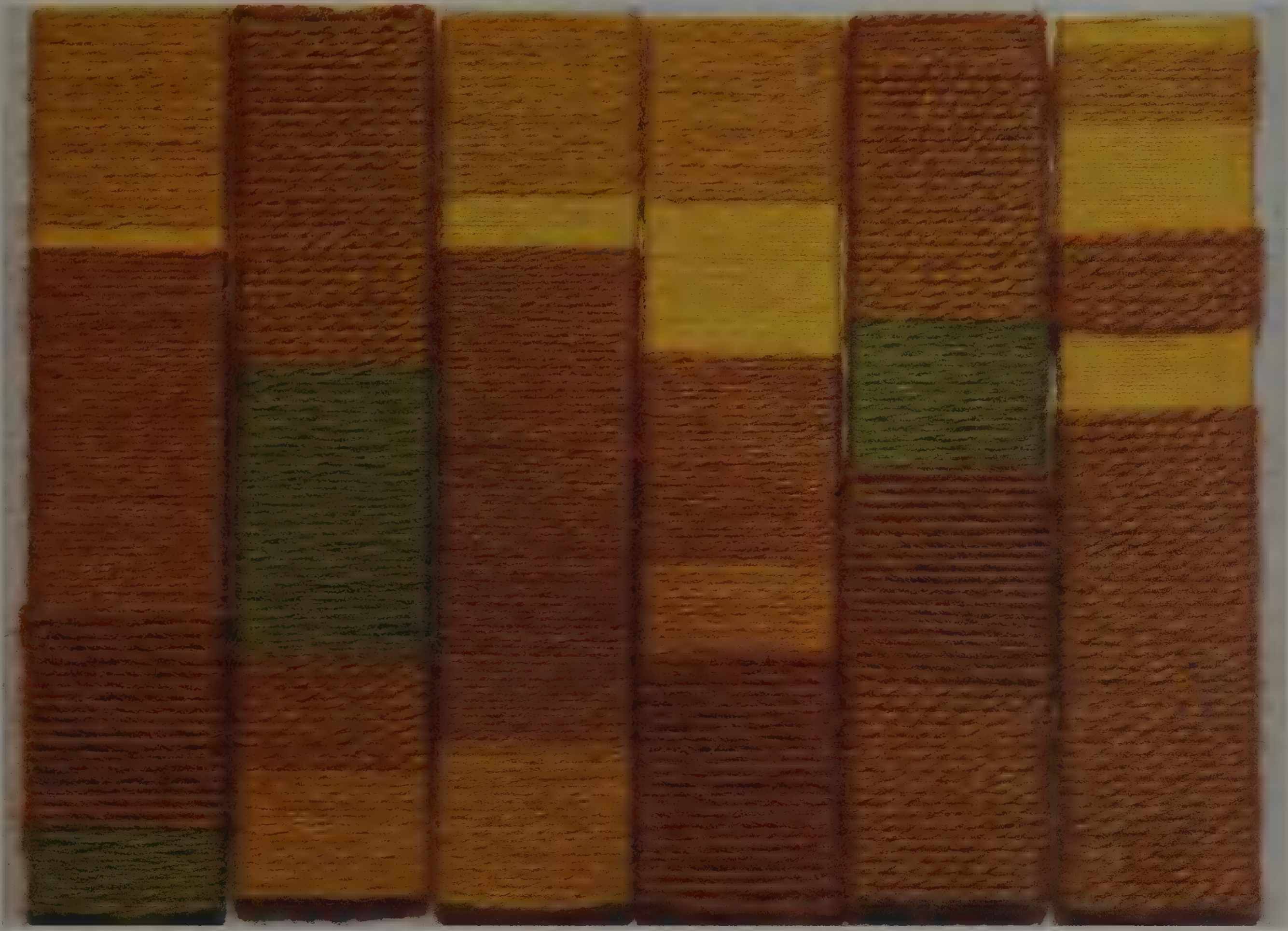
A feeling for different textile materials is developed at the beginning of the working process through simple comparative exercises in texture values. Cardboard elements (stripes and squares) are covered with collected fabrics, clothing, and decorator remnants. The different textures are optically and tactually explored through overlapping and combining different fabrics, and single elements are compared and structured into a composition. In these exercises monochrome materials are predominantly used so that the appearance of the textile is not confused with the color.

In the top example numerous identical cardboard squares are wrapped one or more in layers of different white fabrics. The composition is achieved by interchanging the square elements. The example below shows a free composition: contrasts and divisions of the surface are created with different layers of material, textures, and directions.



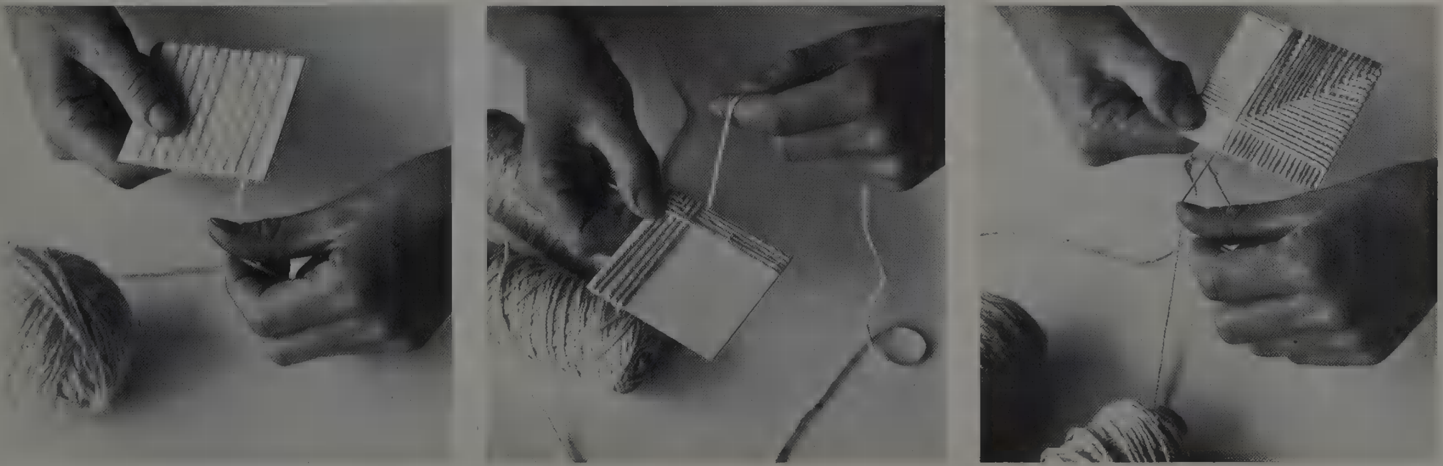
In the following exercises textures are produced by wrapping the cardboard elements with natural threads available [illegible] many qualities and colors. Various densities are achieved by parallel, diagonal, horizontal-vertical wrapping as well as criss-cross wrapping with two threads. Creative alternatives are developed by manipulating the materials, colors, combinations, quantities, rhythms, and working methods. Textural values appearances are examined in many single studies and applied to elementary compositions.

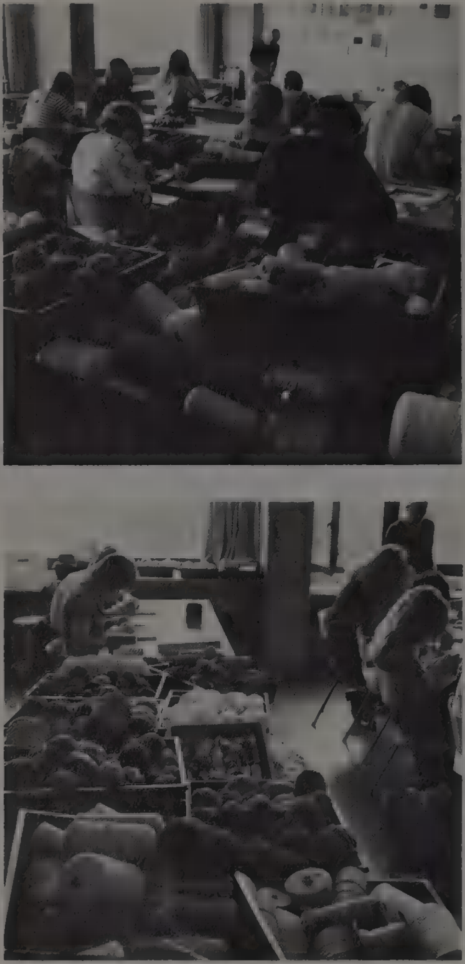
The pictures show studies in which textural values are created with different natural-colored threads and various dense and parallel wrappings.



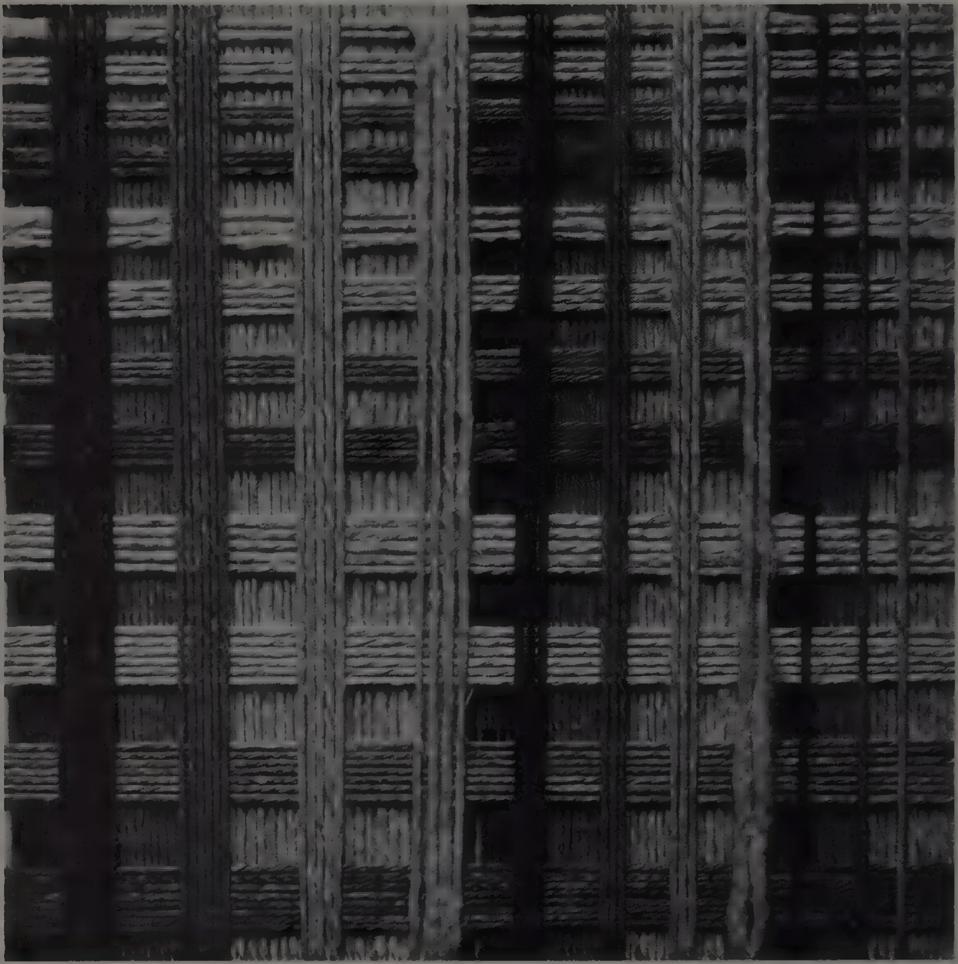
Through parallel wrapping of cardboard strips rhythmic, colorful textures are achieved and structured in the above composition.

The photographs show simultaneous parallel and crisscross wrapping with two threads from two directions.



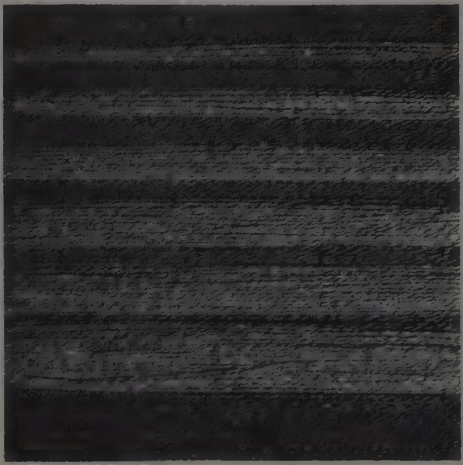


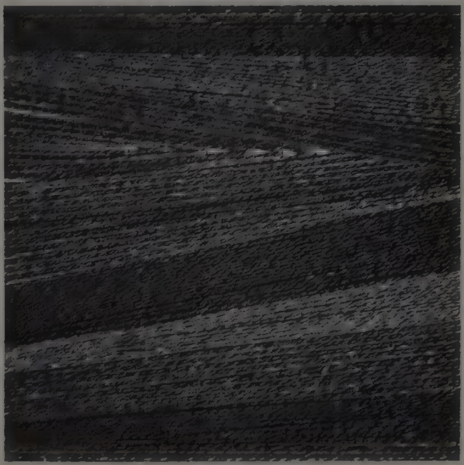
Students at work with an abundance of available material.

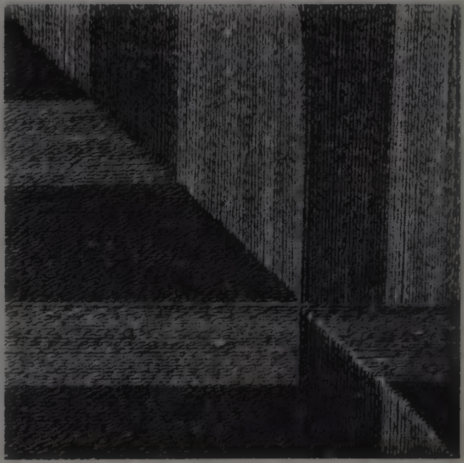


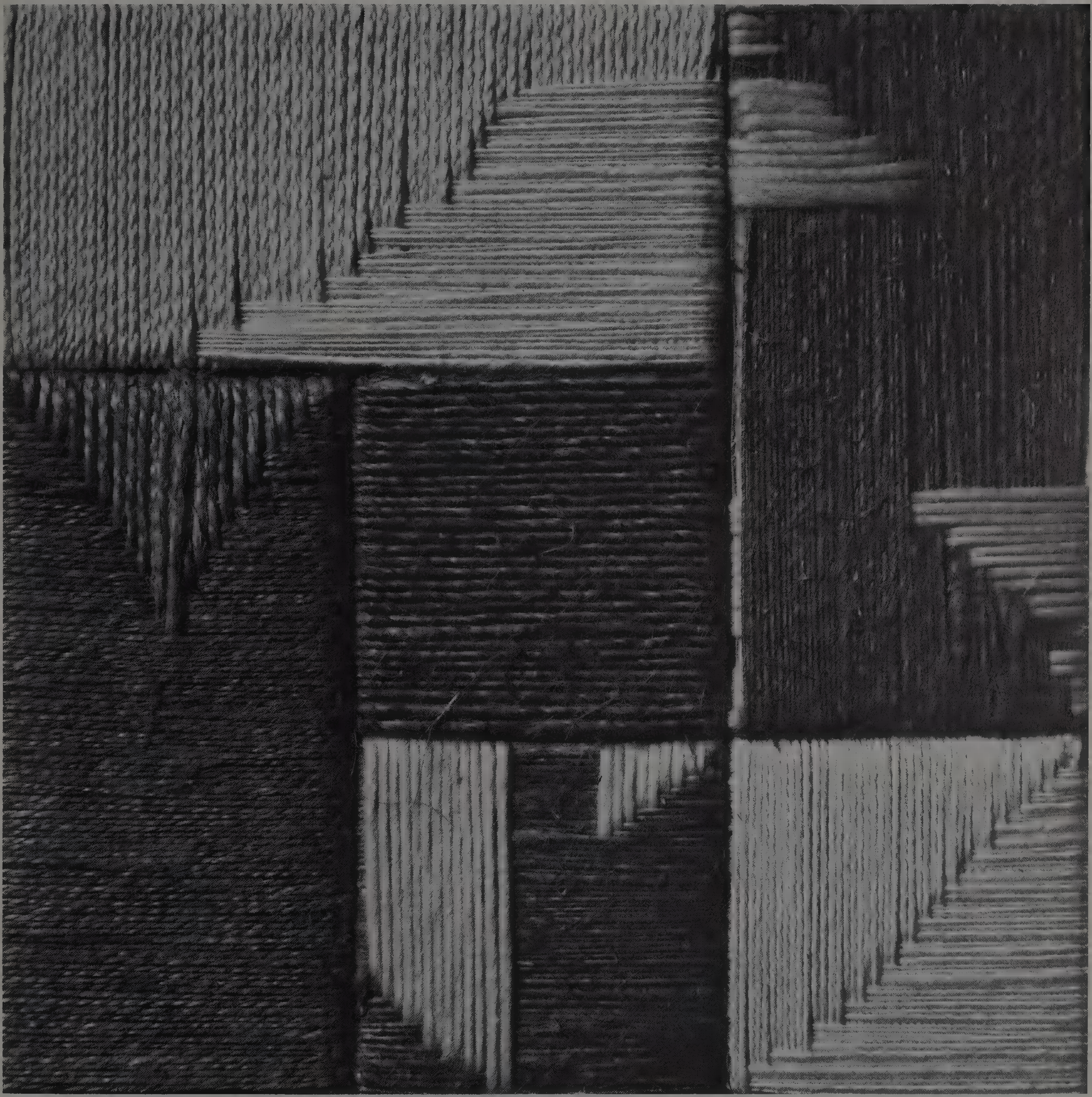
This progressively organized composition was achieved by layering different dark, natural-colored material through horizontal-vertical parallel-wrapping.

The three examples below exhibit parallel, diagonal, crossed, flat-relief, layered, and single-thread structures.

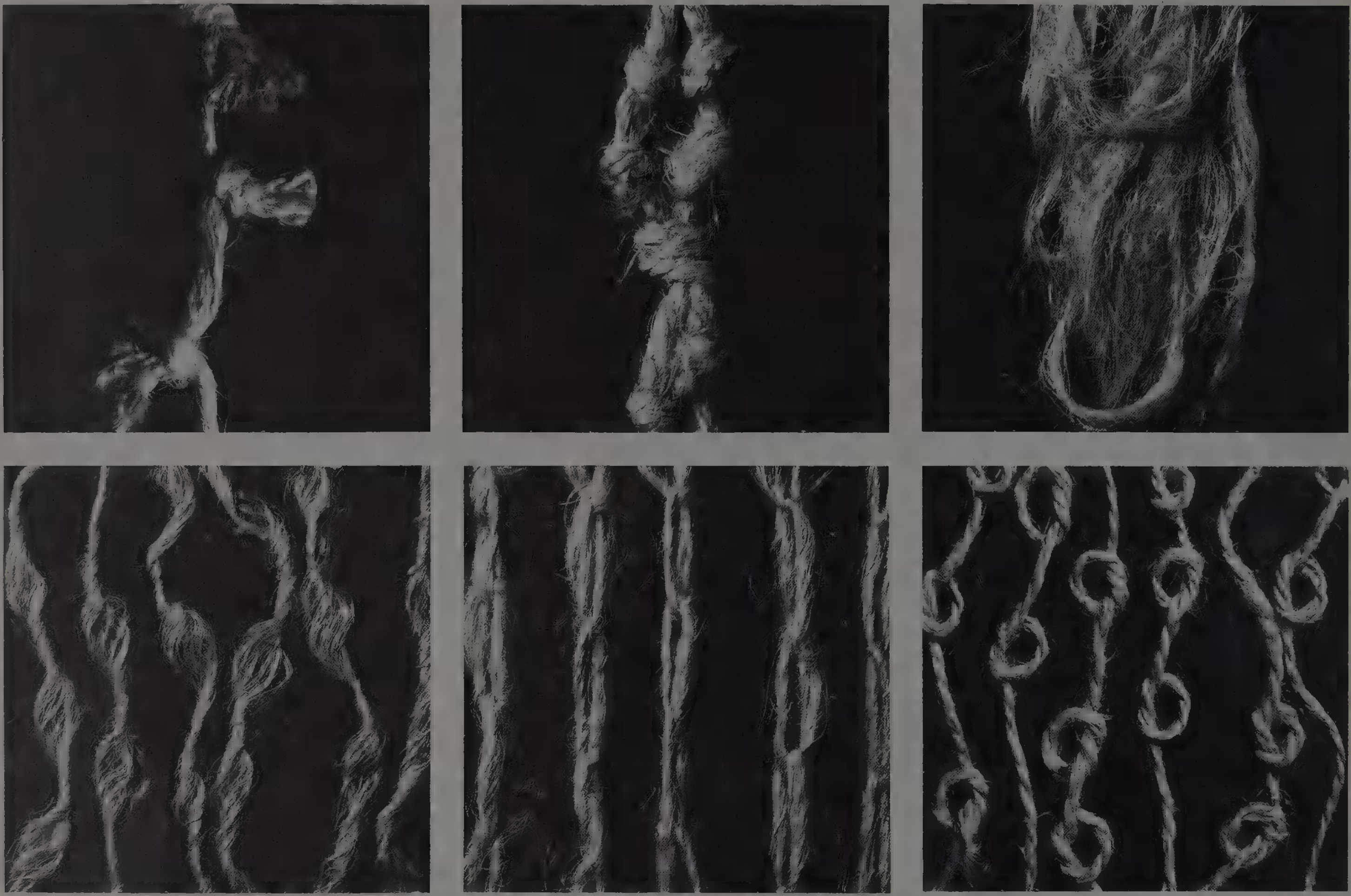








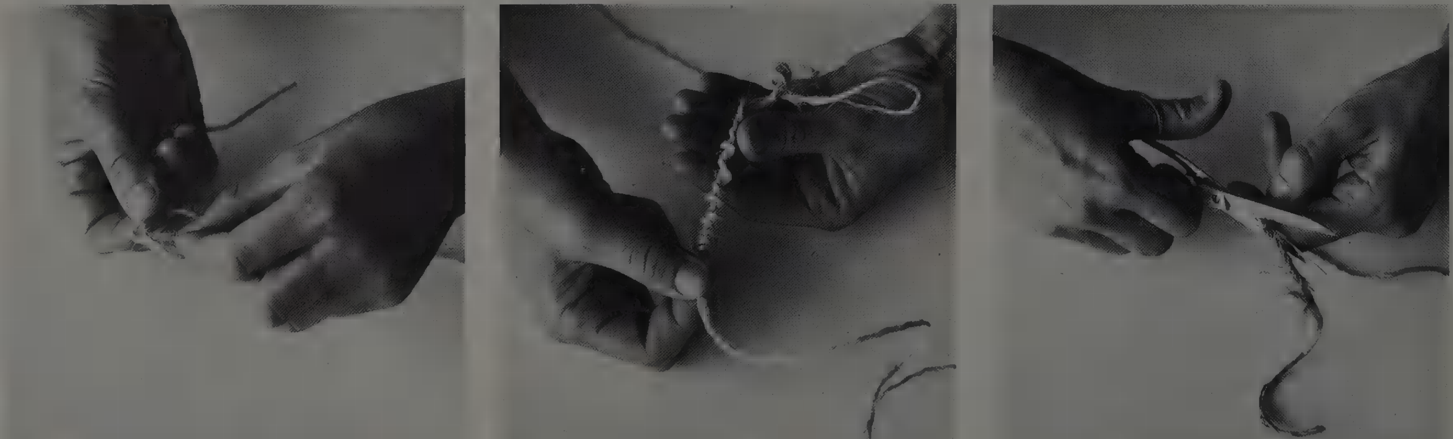
Many free, rhythmically organized, textured elements are assembled into a single composition by wrapping two threads in two directions. Different light-dark values and thicknesses of natural-colored thread are used.



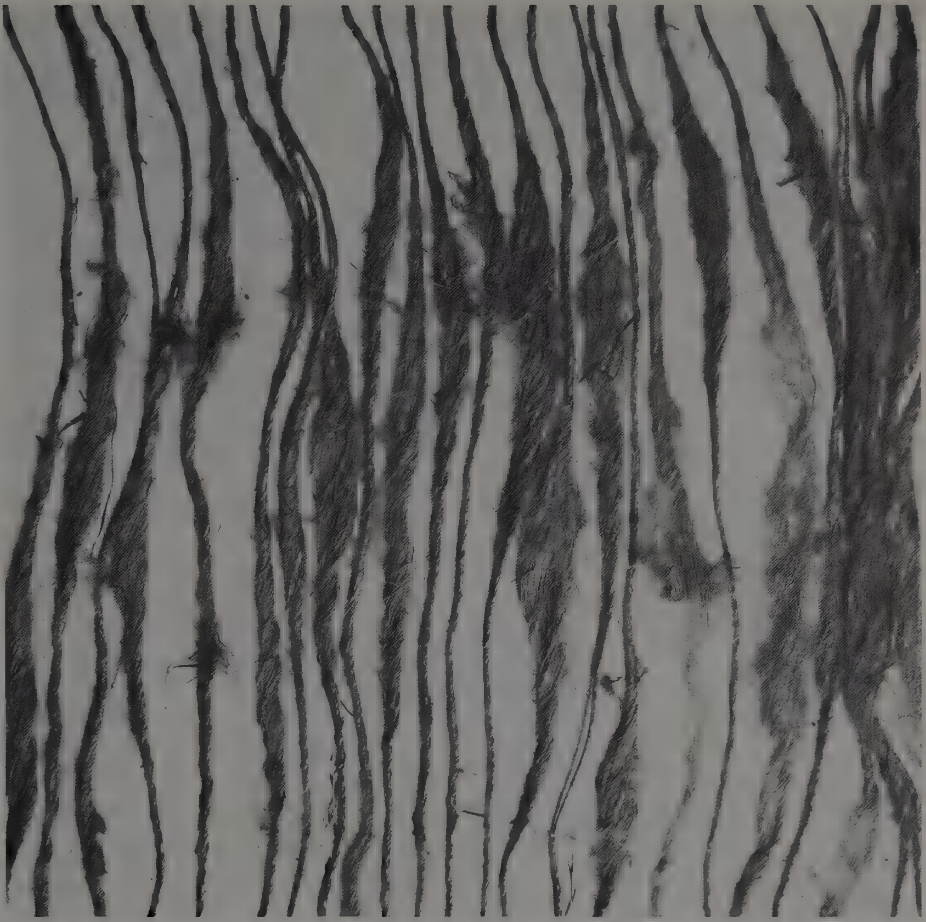
In contrast to the preceding exercises, in which the materials were used unchanged, here the structure of the thread is partially changed. In individual studies various techniques are discovered (tightening, untwisting, knotting, spinning, tearing, cutting, and unraveling). Needles, knives, scissors, and other simple tools are used. Organized compositions are structured with discovered formal elements and rhythmically textured surfaces. The examples here and on the following page show the results with natural-colored materials.

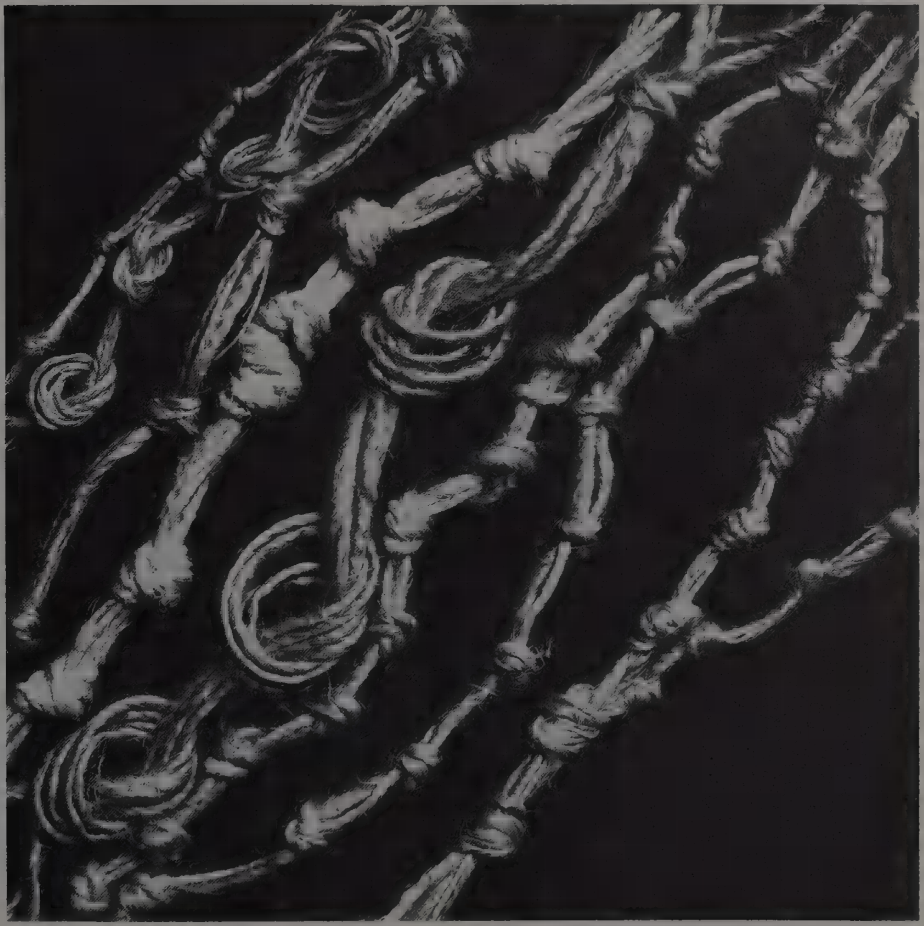
The above studies are produced with cutting-knotting, knotting, unraveling-free looping, partially untwisting, and various looping techniques.

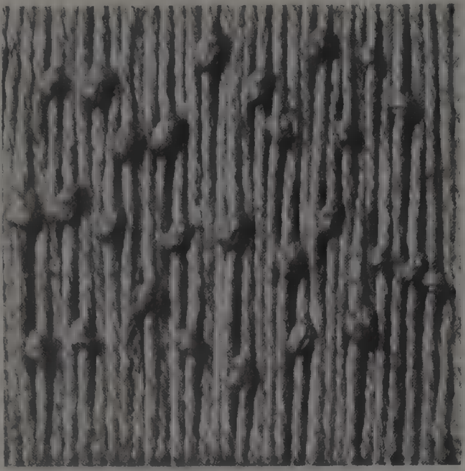
From left to right, the three photographs document simple working techniques, such as knotting, untwisting, cutting and tearing.

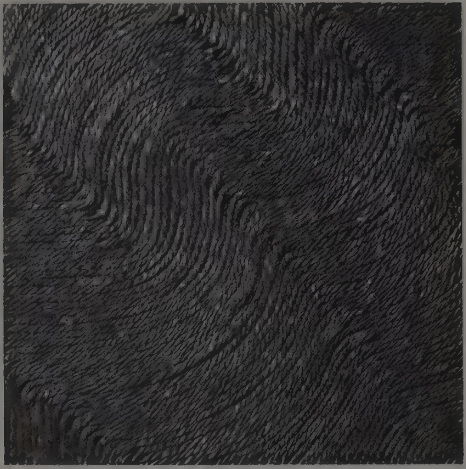


Above right, the thread is partially unraveled, untwisted and scraped with the needle; below, in contrast, the thread is joined into bundles with various knotting techniques. Single elements and empty spaces are worked into an interesting unity in both examples.

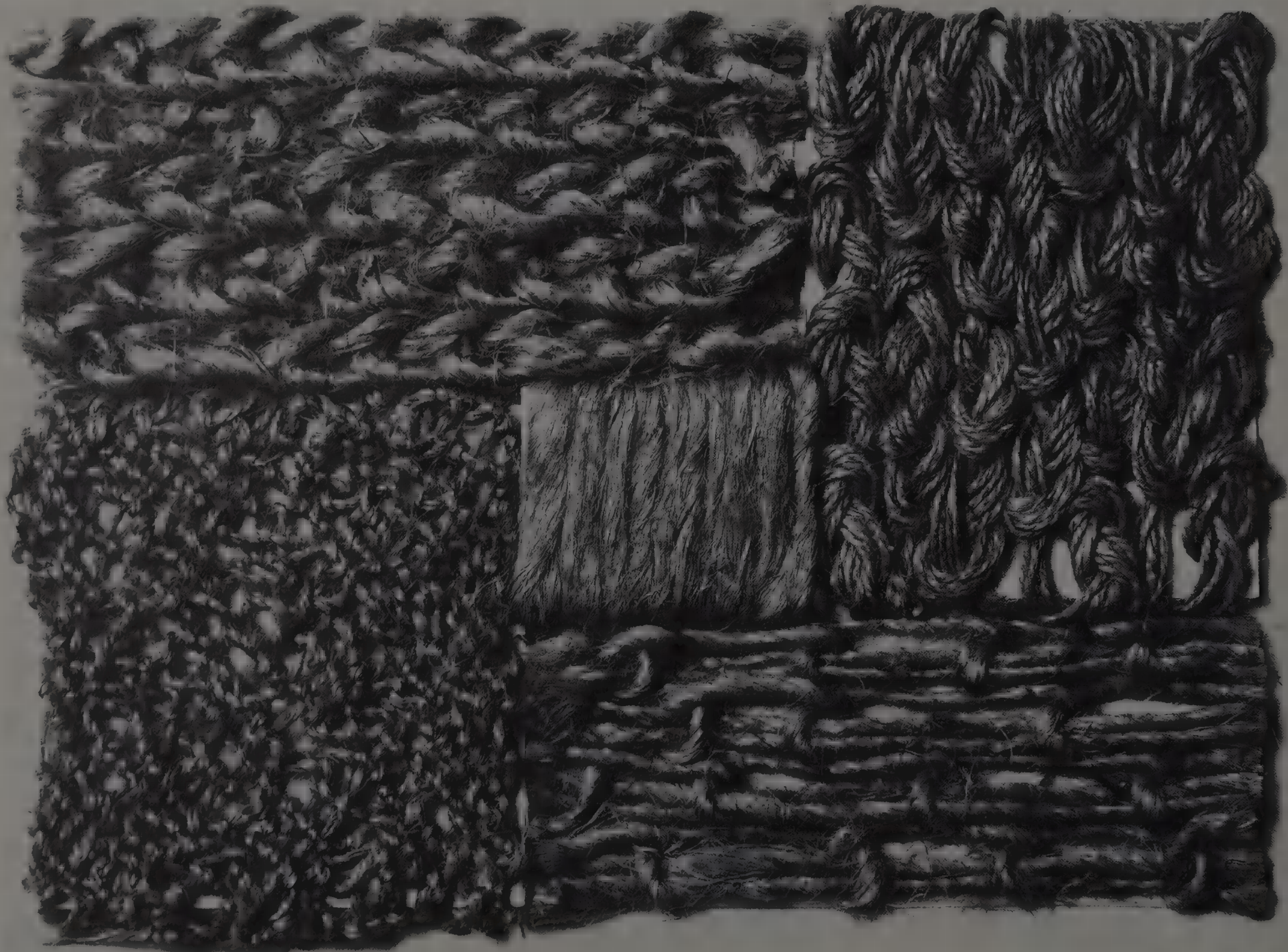


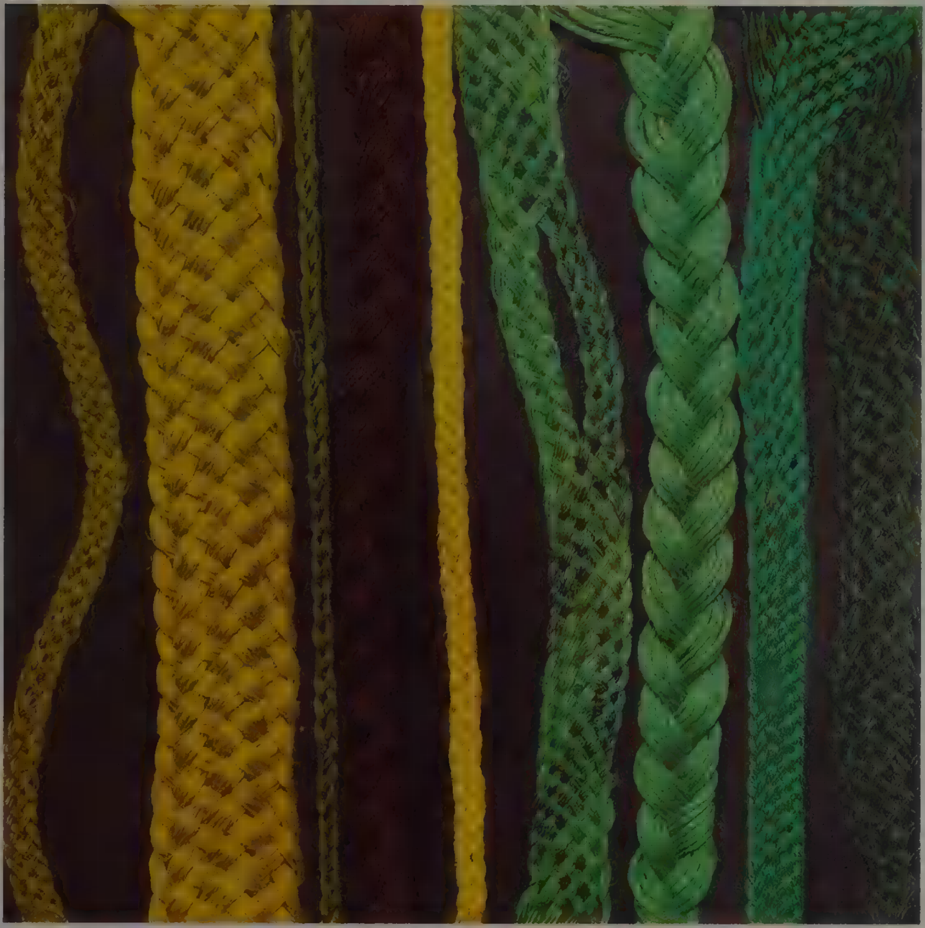


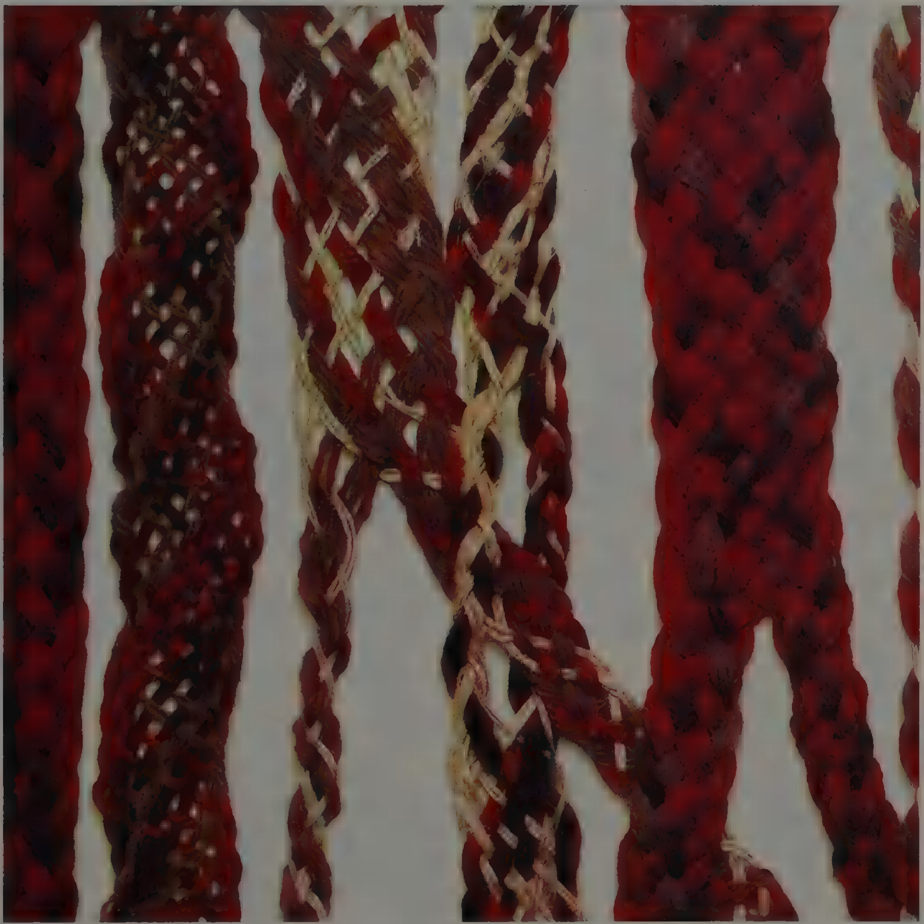




The above textures are produced by gluing worked threads to cardboard squares. They are preliminary studies for the composition, below, of different sizes, textured surfaces, and thread bindings.

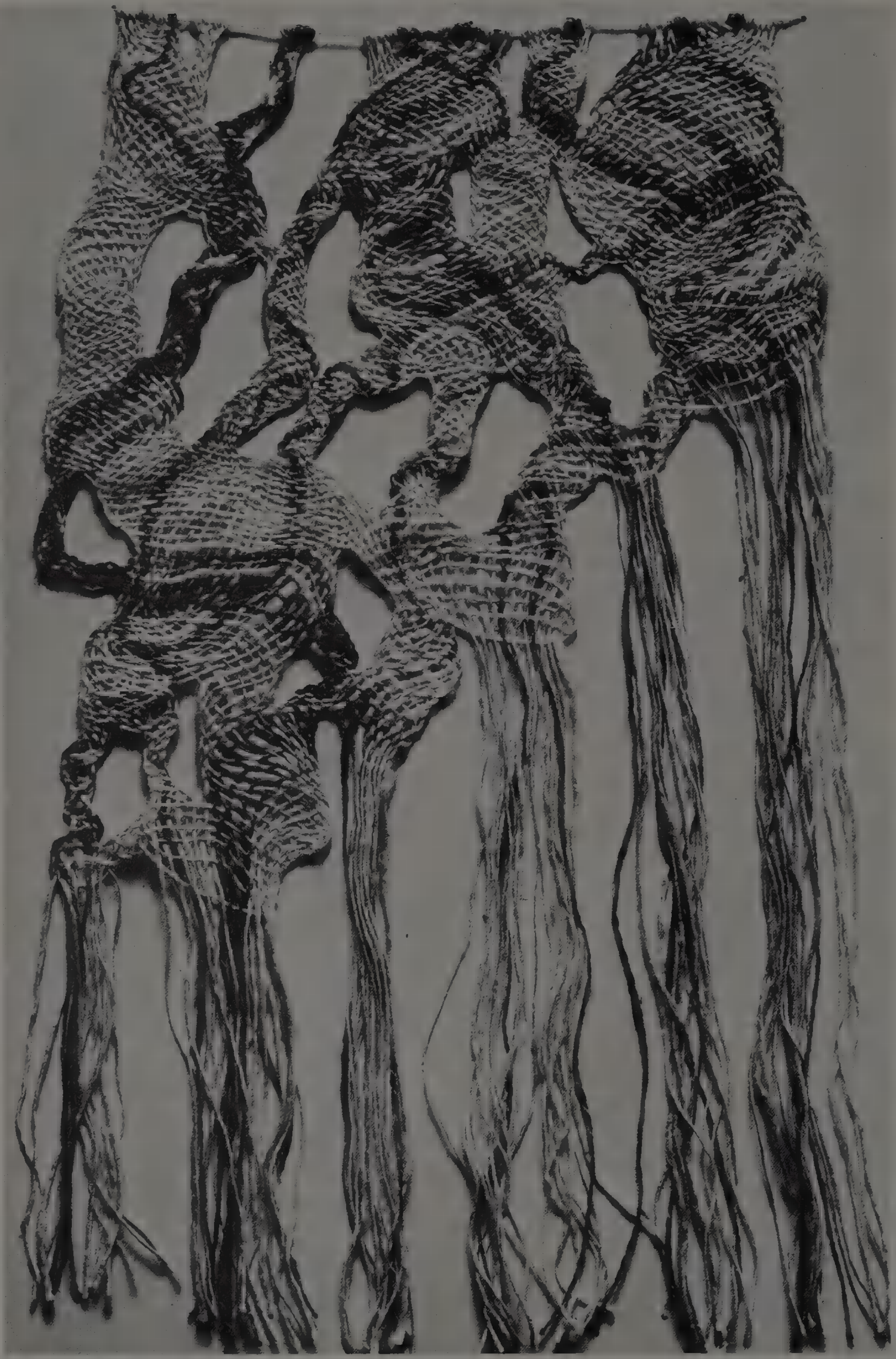




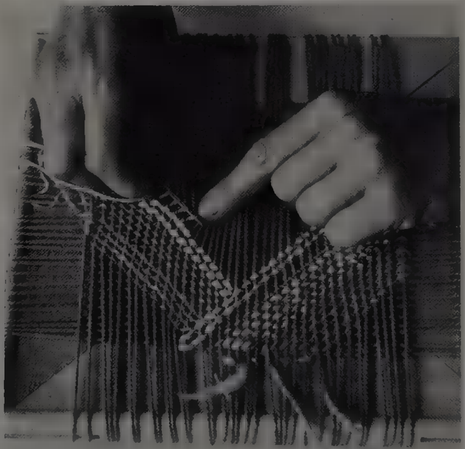


Different textiles and other materials are worked with simple braiding techniques; mostly, thread into bands and surfaces. These are organized into textured surfaces with and without open spaces or through incorporating open spaces and branching the bands or threads, crossing-uniting, and again braiding into surfaces. The color selection is limited to one or two areas. In advanced exercises the students work with techniques requiring two and three braiding directions.

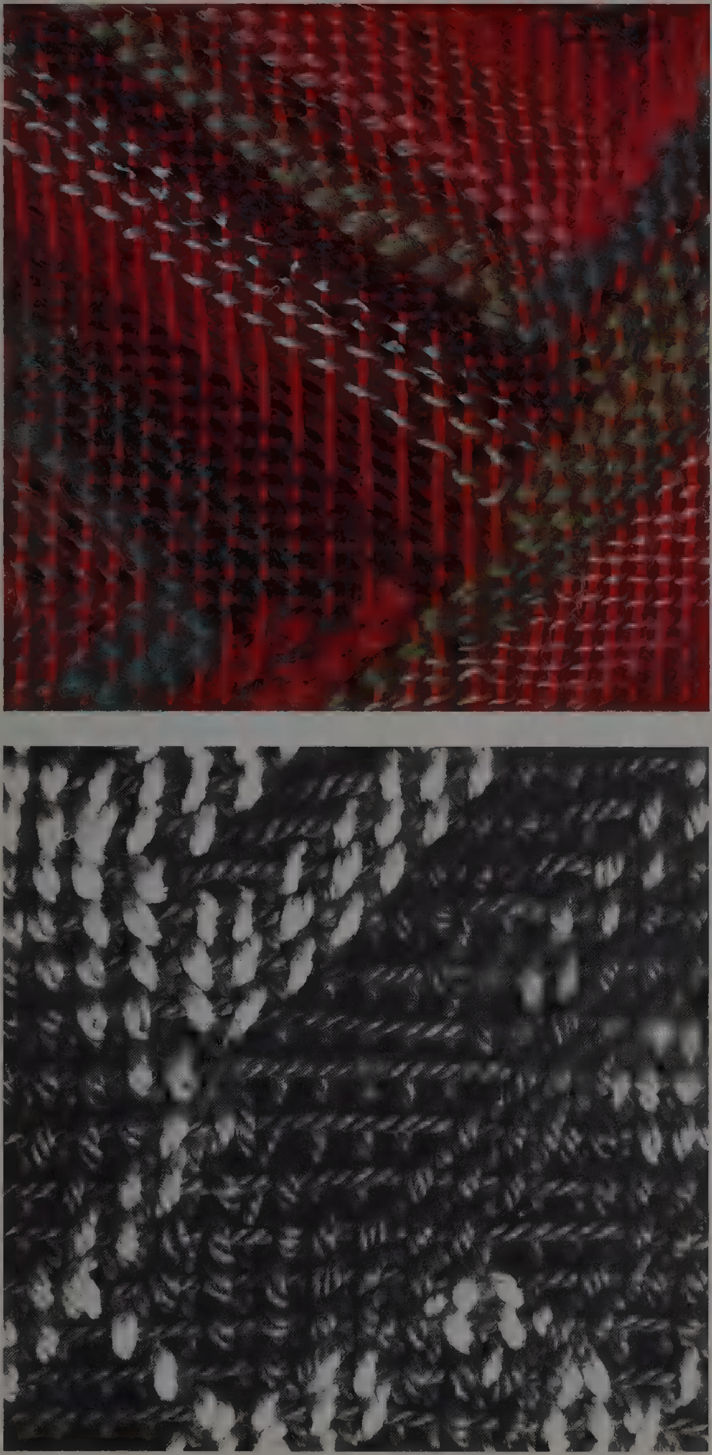
In the following two examples various types of threads are braided and formed into surfaces. Open spaces and branching bands allow crossing and penetration.



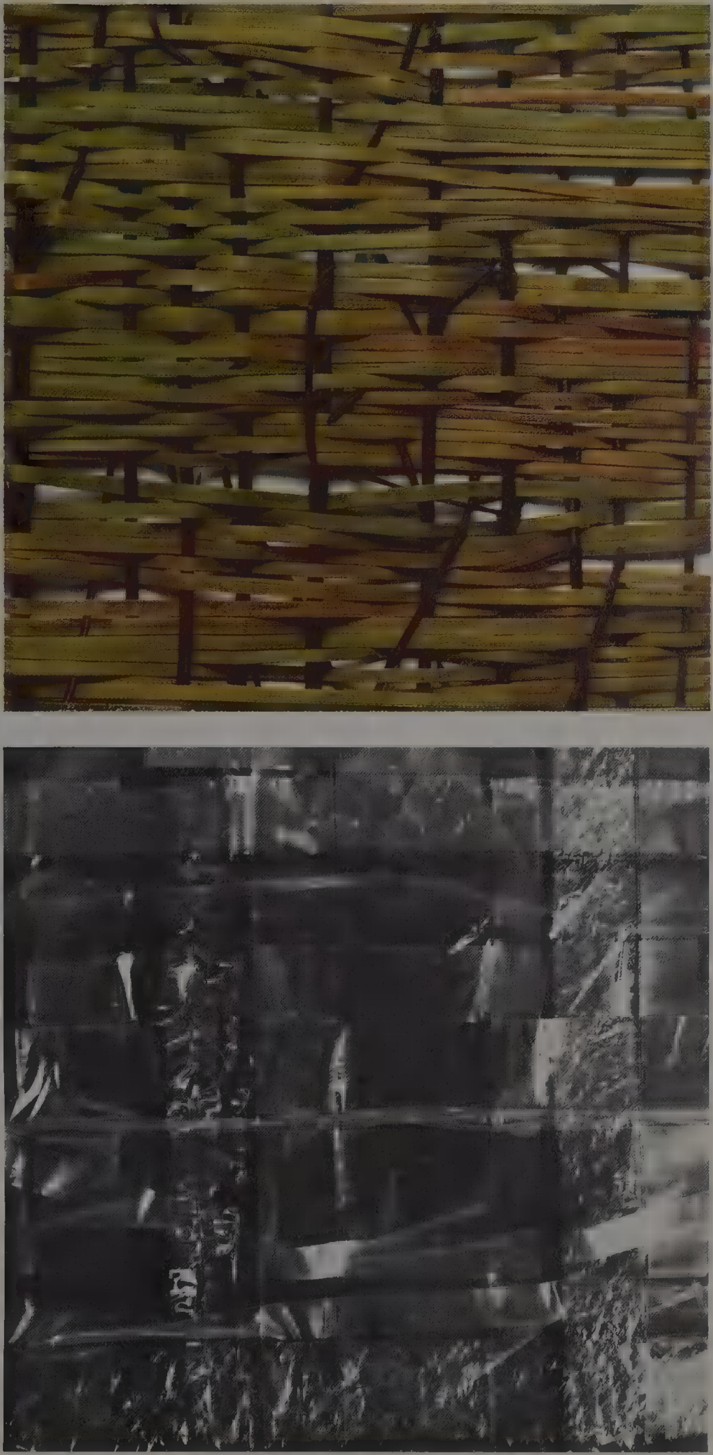
A broad, rhythmically composed texture is formed with open spaces by branching and rejoining the different band elements.



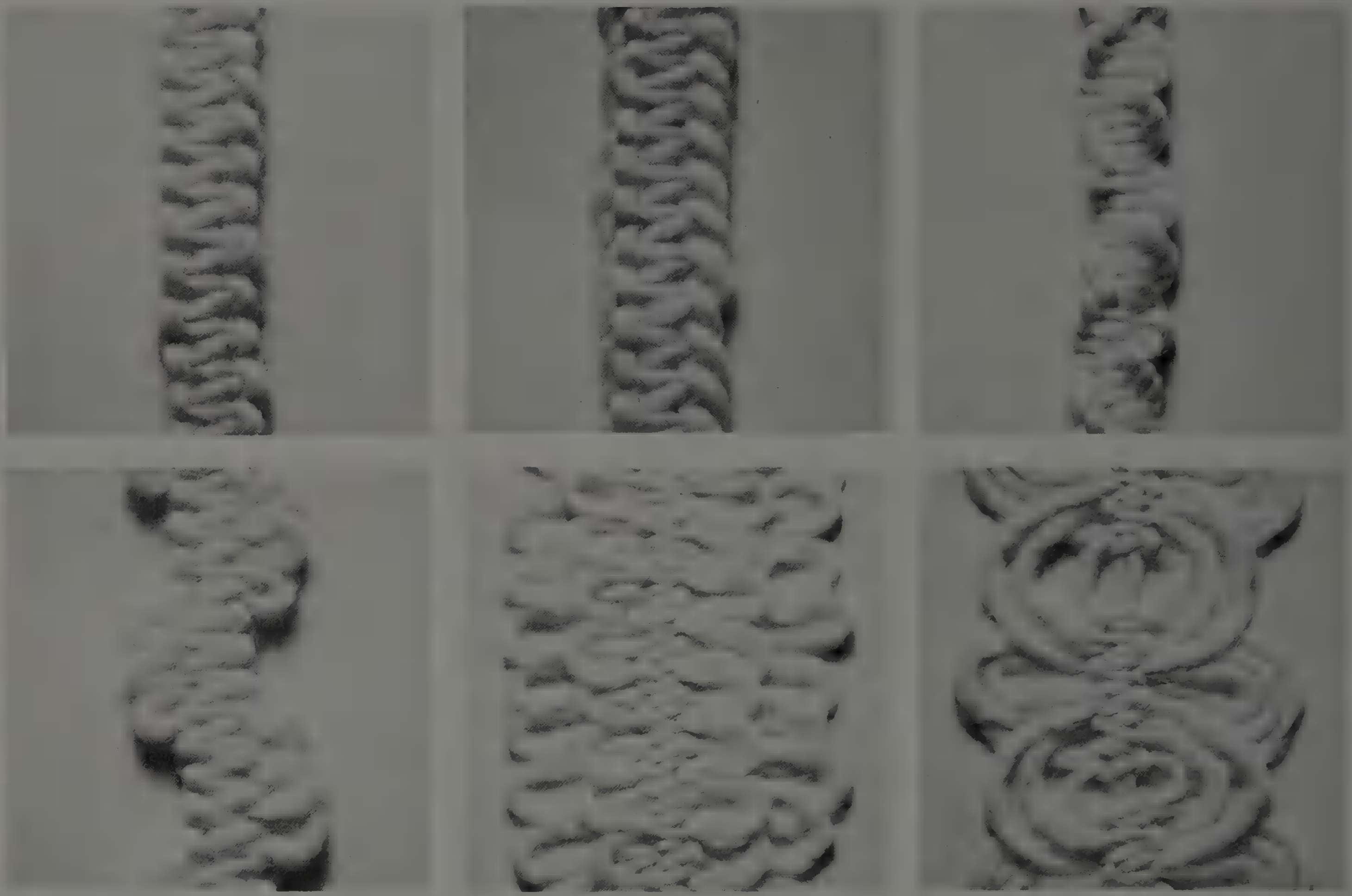
The photographs show, from top to bottom; band braiding with opened and rejoined parts; braiding from three directions at a changeable angle (90° and 45°); braiding bands and strips of plastic film with fixed and movable thread systems.



Braiding from three directions: a 45° angle, instead of 60°, allows registration in two directions.

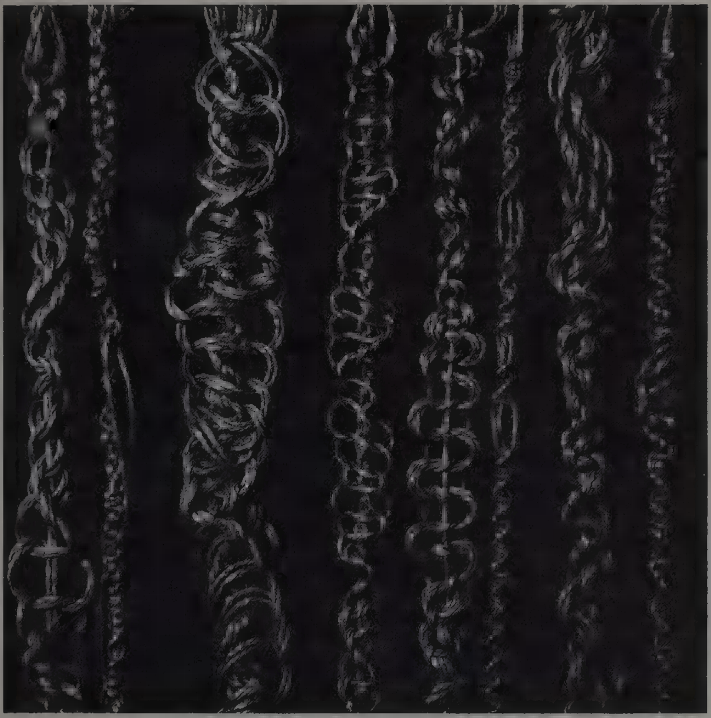


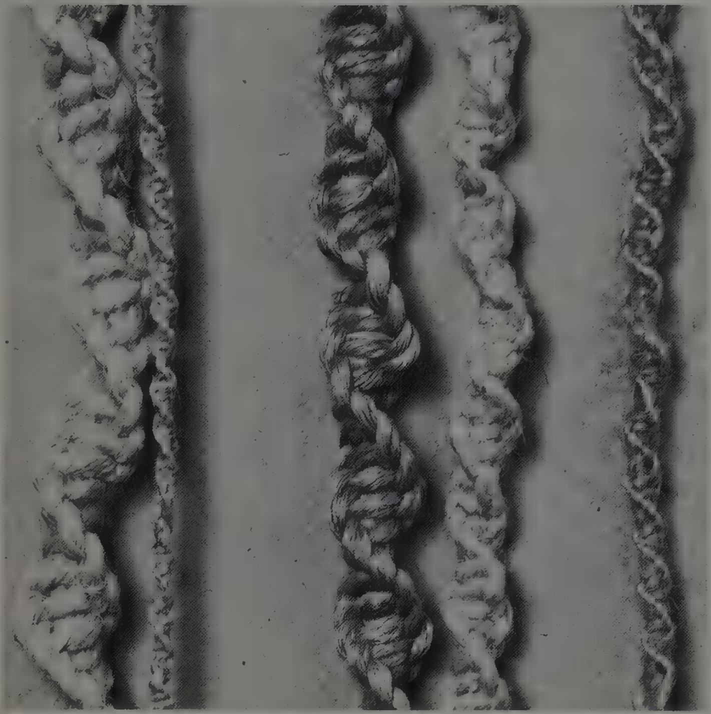
Shown are two examples of braiding nontextile materials: above, plant elements; below, partially worked strips of plastic.

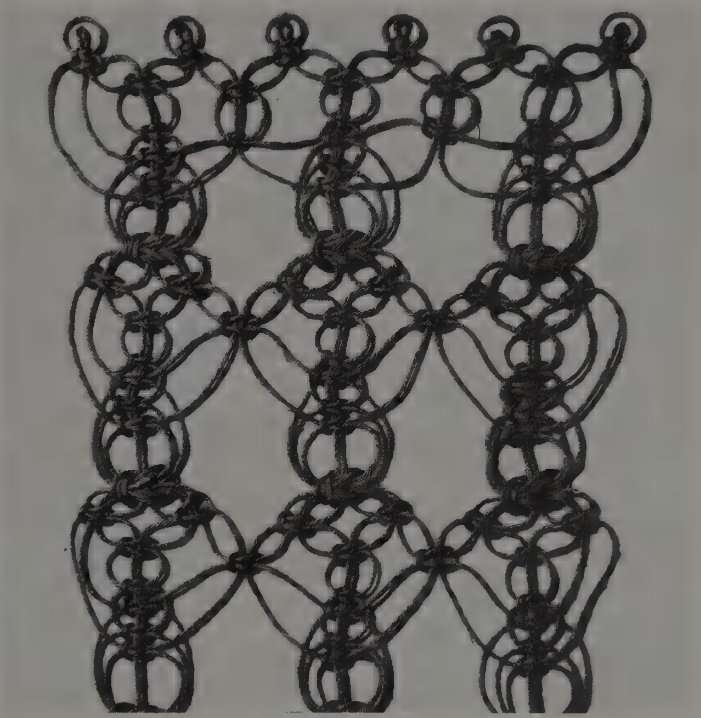


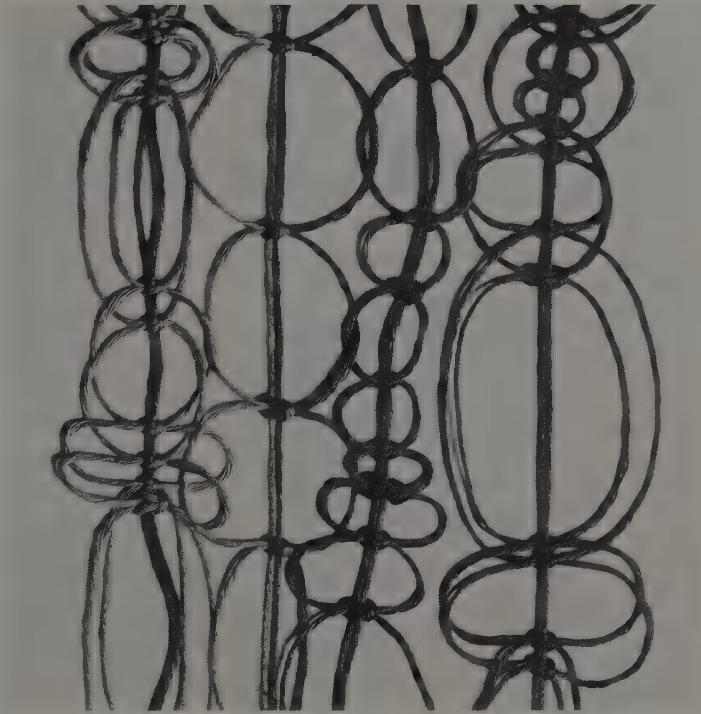
In the following exercises elementary knotting techniques are examined with various materials. They are independent from decorative, usable articles, especially in the well-known macrame technique. The subtle knotting formations develop manual dexterity. The resulting formal elements are organized into a composition or joined into a netlike surface.

The above studies show formal elements created with knotting techniques and partially worked with more than two thread pairs.



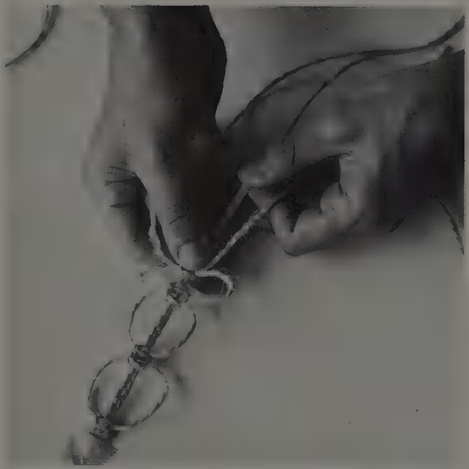


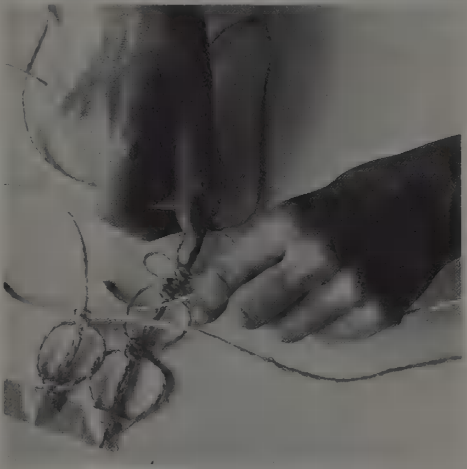


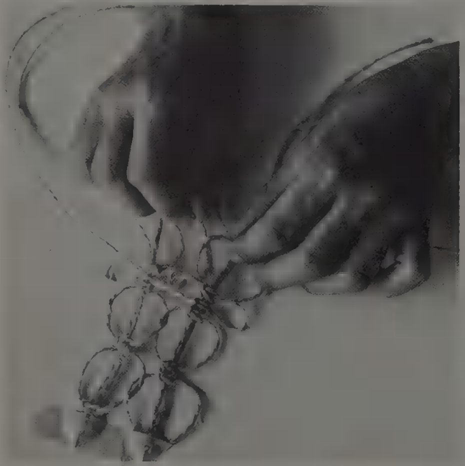


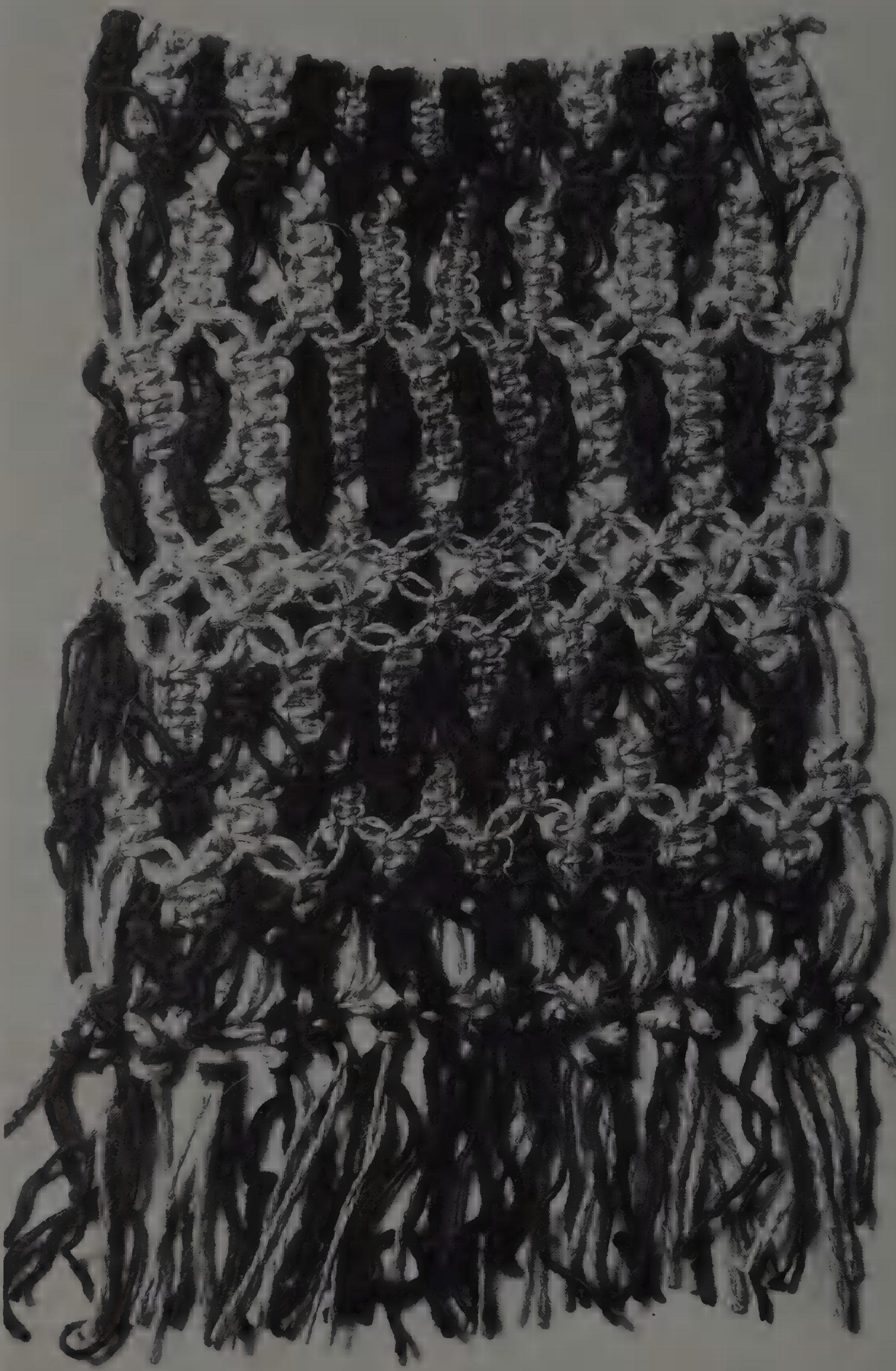
Two band compositions are shown here: various materials are worked with the same knotting technique.

Two examples of netlike surfaces are shown: above, standardized knotting; below, simple linking of irregular elements on thread supports.



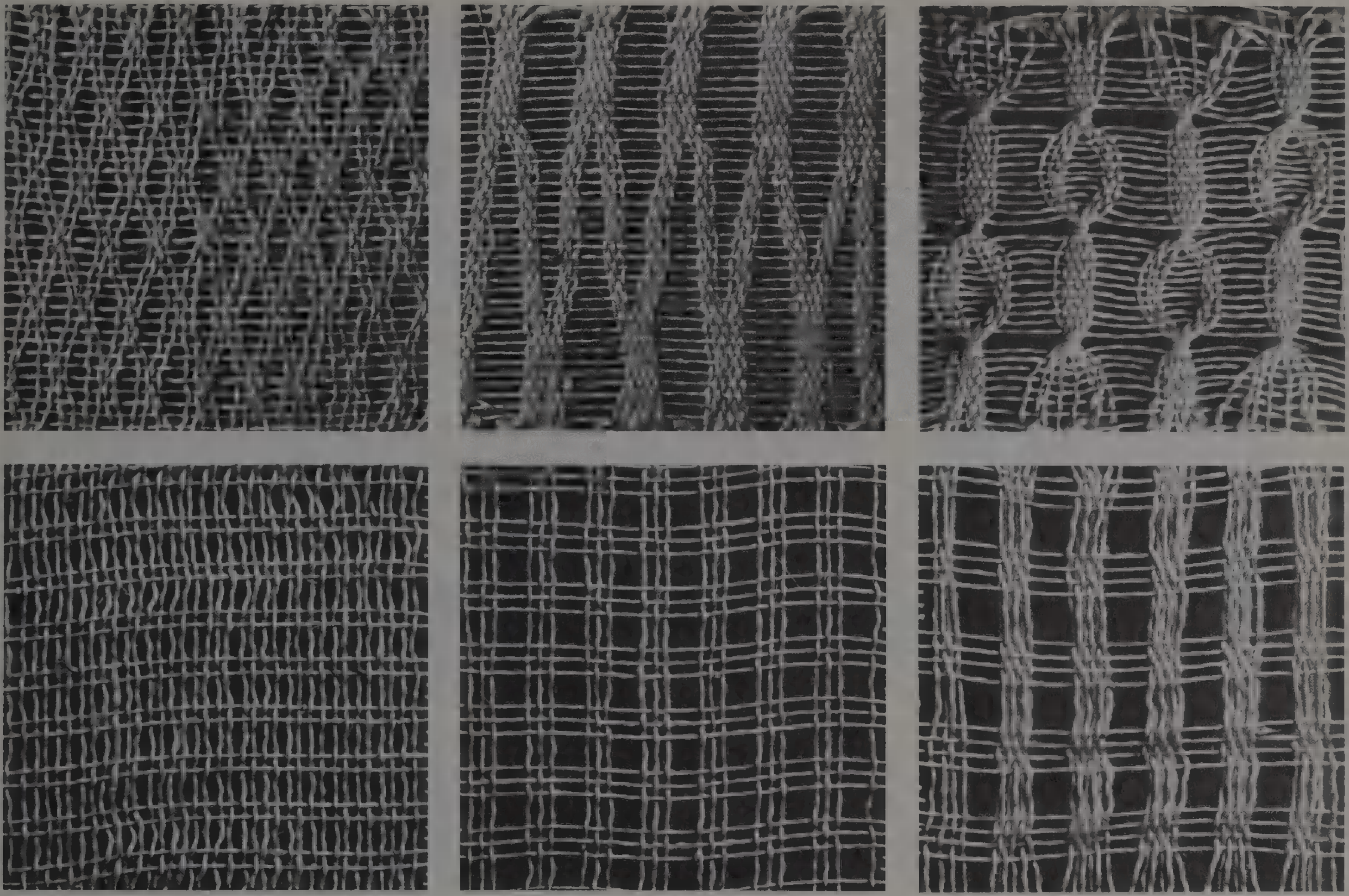






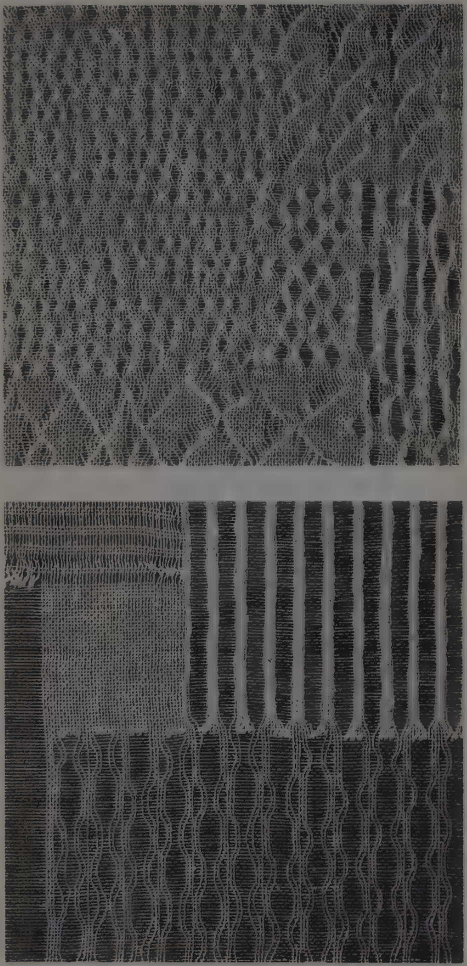
The three photographs show how knotted elements on thread supports are linked into a net technique.

Two penetrating knotted nets are made with contrasting light and dark materials.

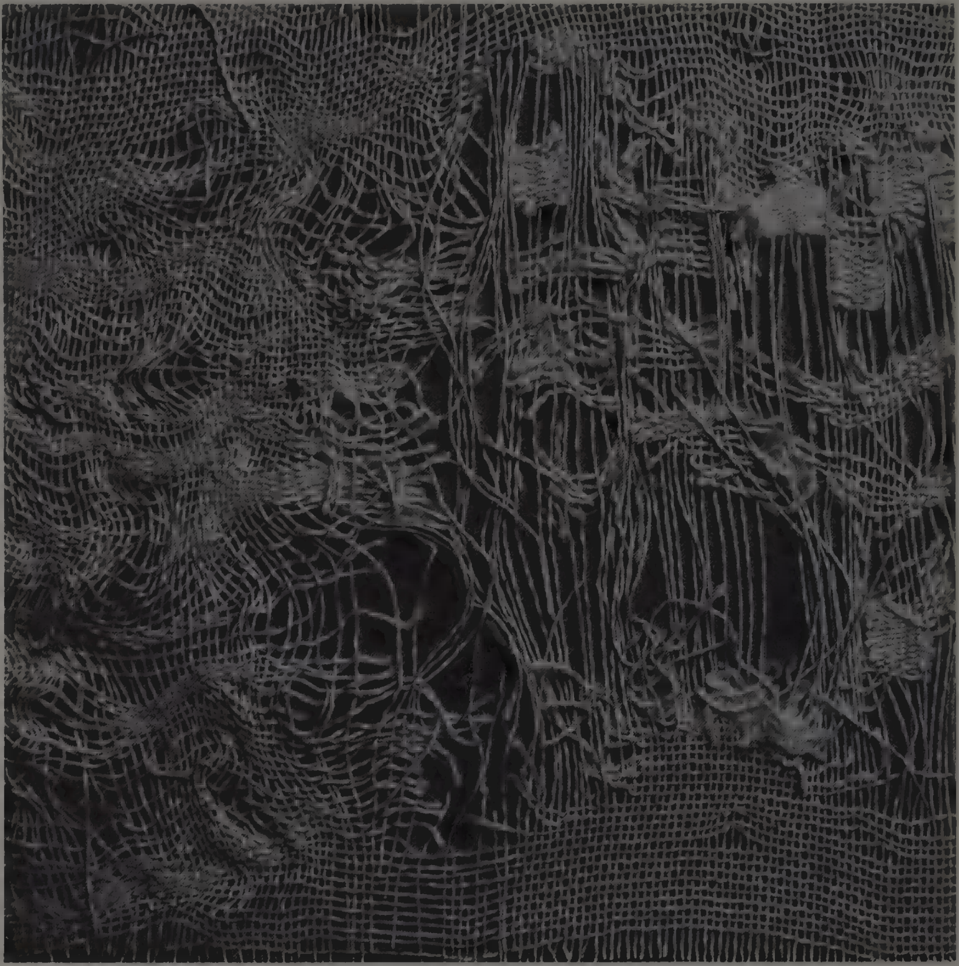


Elementary structure variations are discovered with existing textile fabrics (sackcloth or gauze) and simple tools (knives, scissors, and nails). Textures are modified through shifting, partial or complete removal of threads, reuse of the threads, tearing, cutting, folding, and drawing the woven surface together. Different combinations from these manipulations are investigated in many single studies and worked into compositions.

These studies show changes in the textile structure: top row, shifting the threads; bottom row, removing the threads and an extracting-shifting combination.

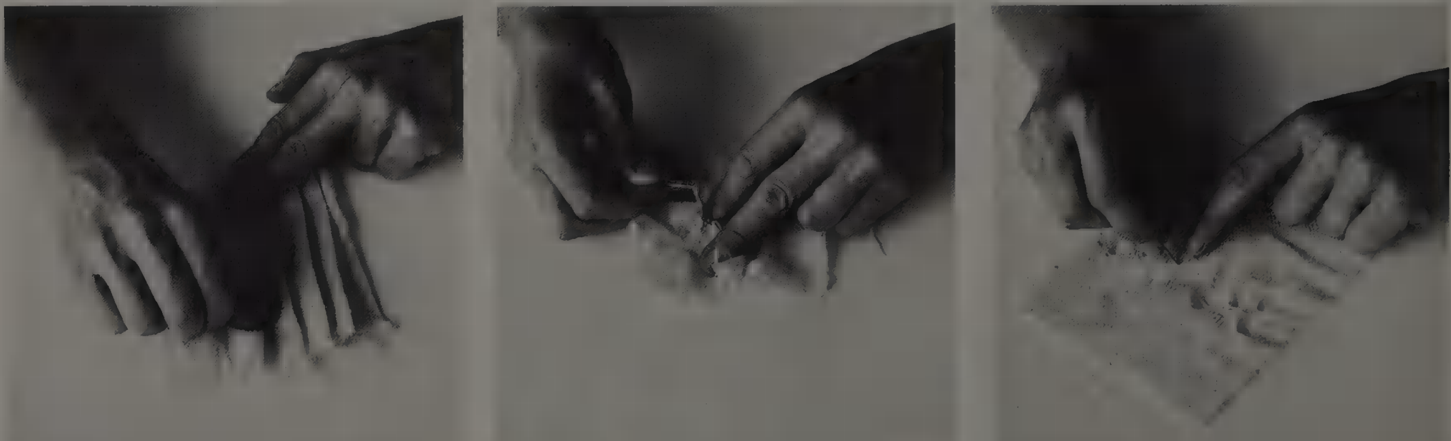


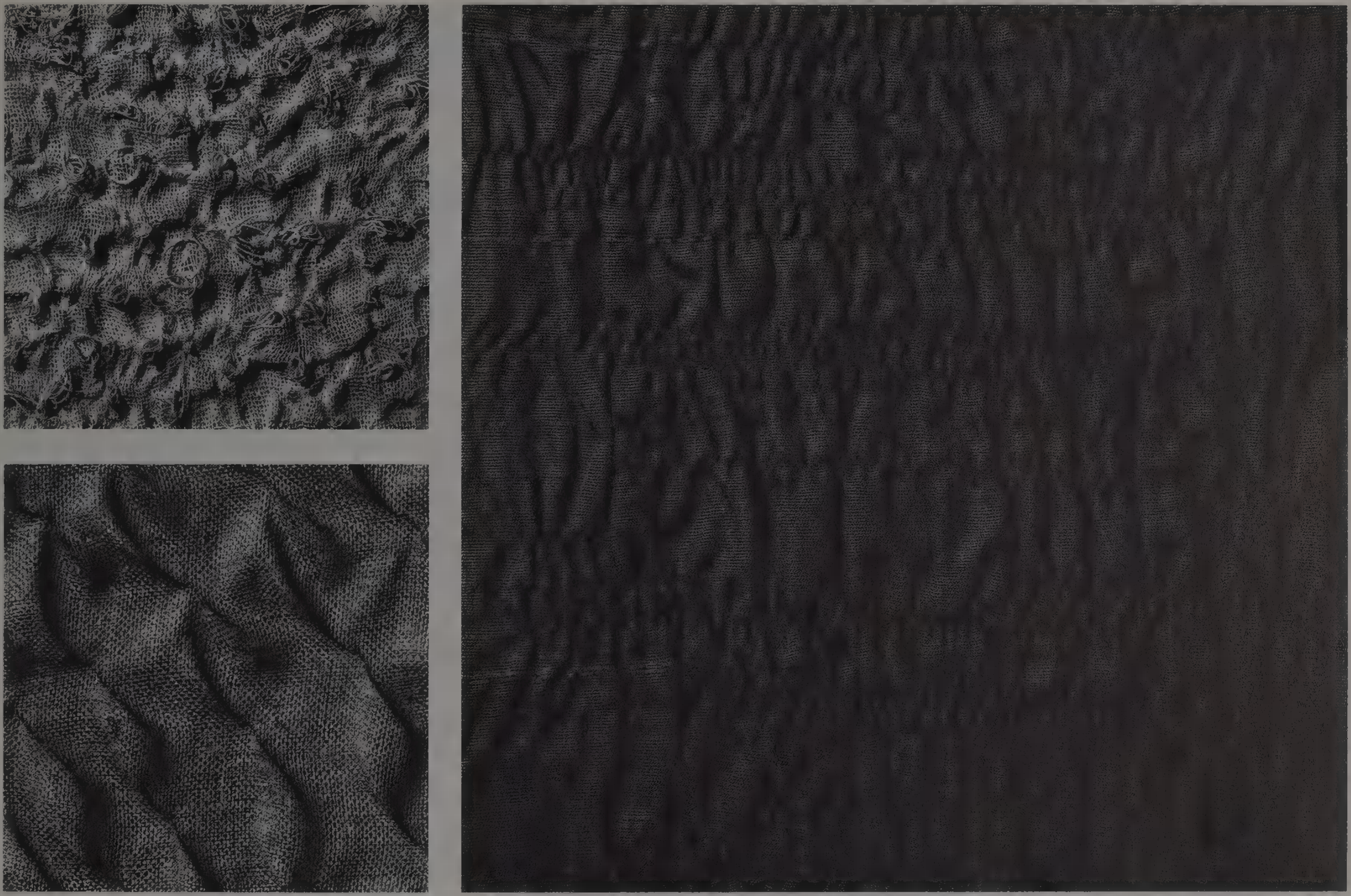
Two horizontal-vertical compositions are created by changing the texture of the original fabric.



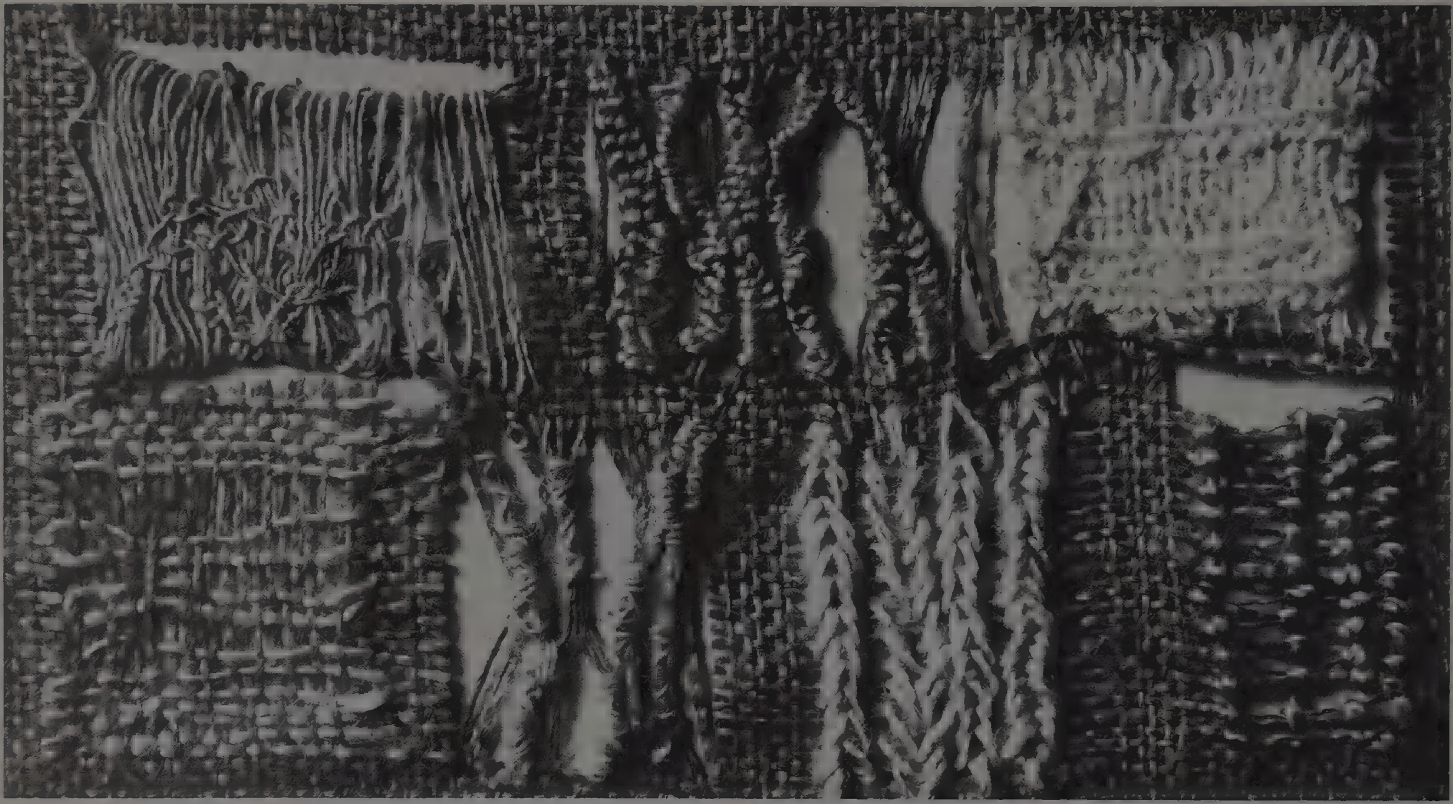
In this organic composition, based on a rhythmically free technique, the structure of the fabric was partially fragmented.

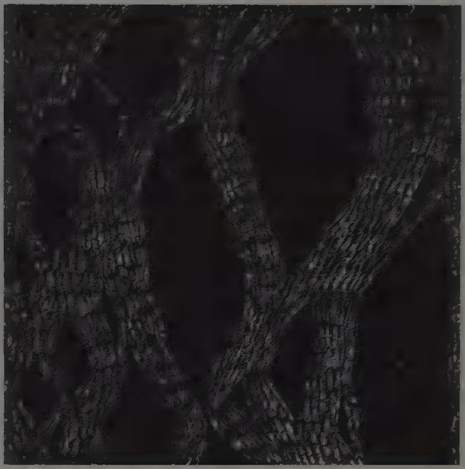
The photographs on these pages show how the structure of a material can be altered with simple tools.





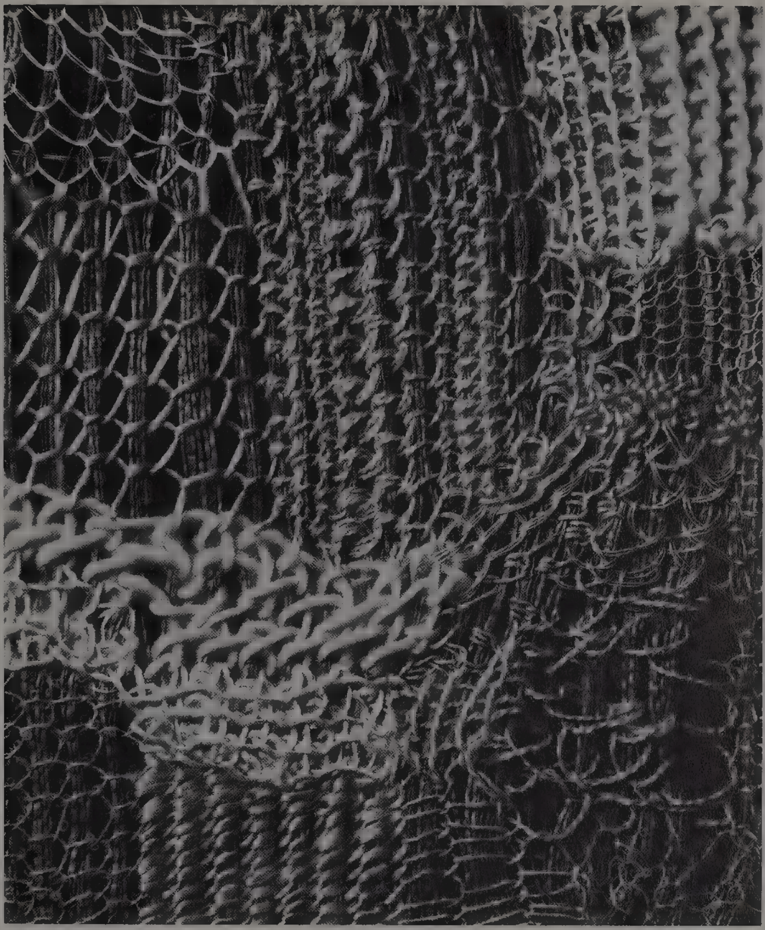
In these three examples the original material is drawn together by partially extracting single threads into relieflike folds.

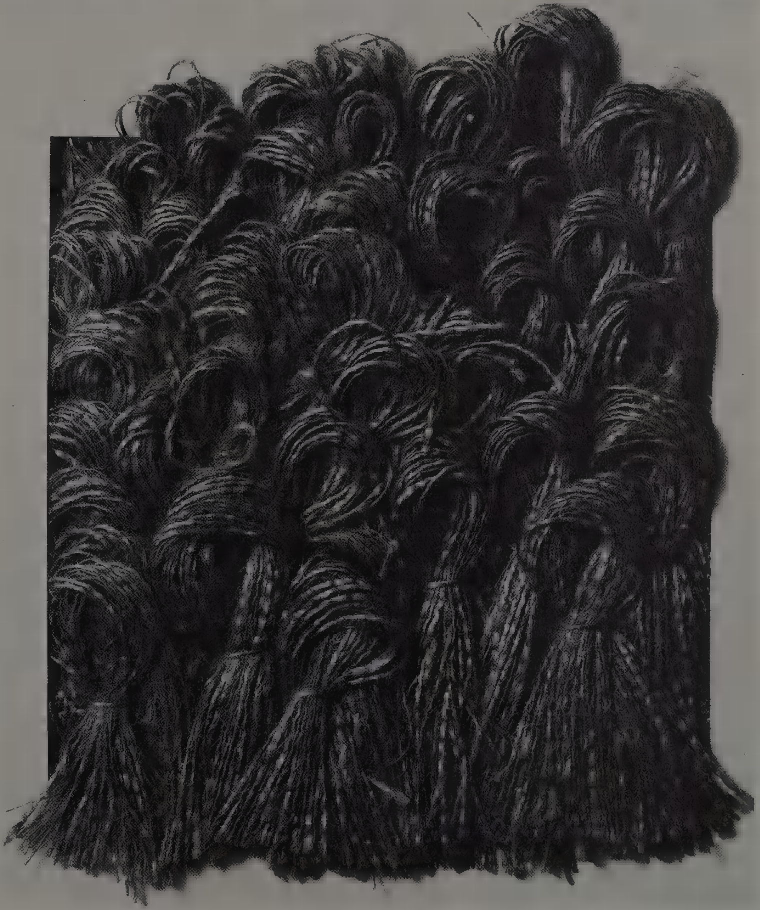




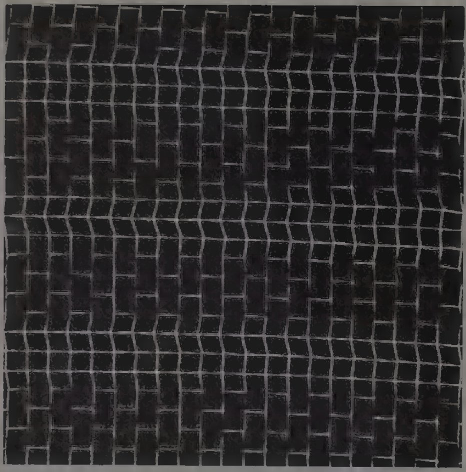
Manipulated structures are further changed by adding different threads in various techniques.

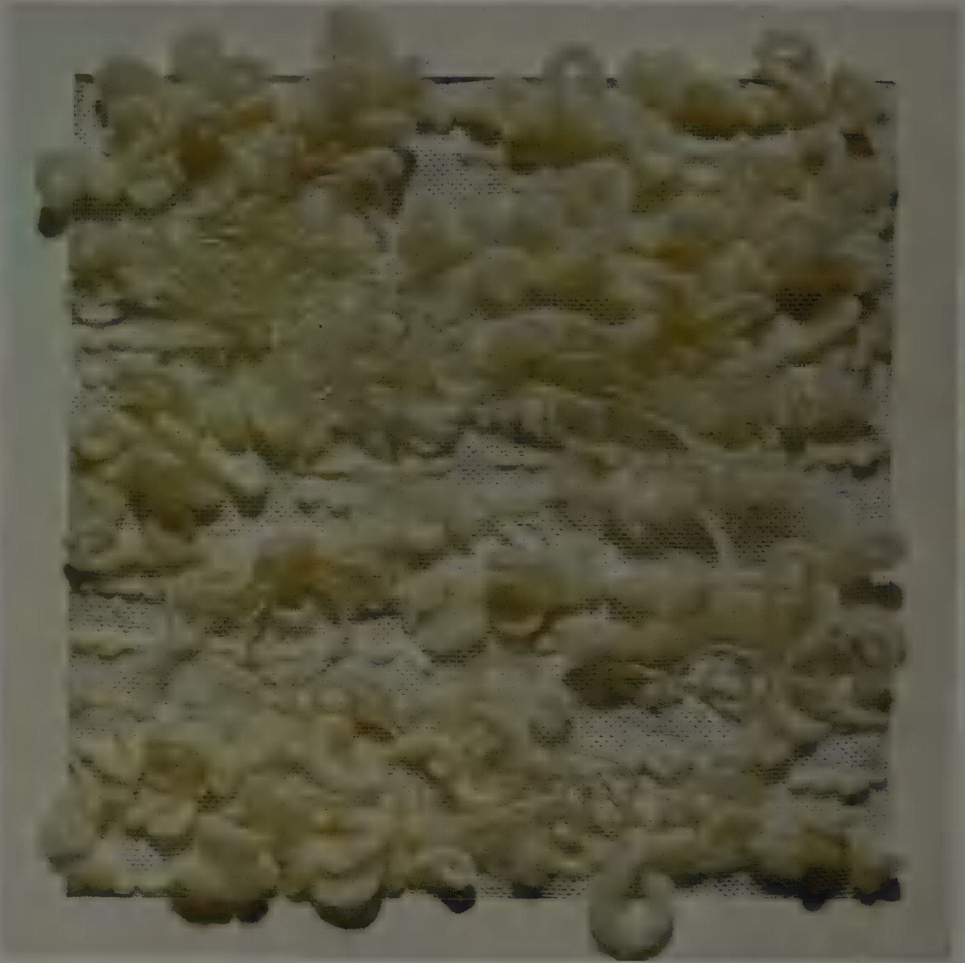
On the left-hand page different natural-colored materials and altered structures characterize an experimental piece with distinct additions through different registration techniques. This and the three studies are preliminary steps for the composition on this page.
In the example above the surface of the various natural-colored materials was created with different densities and quantities of looping.
The example below shows sewn thread bundles originating from the burlap support underneath.





The three photographs on the left show different registration techniques: from left to right; loop stitches, weaving, and wrapping thread groups.

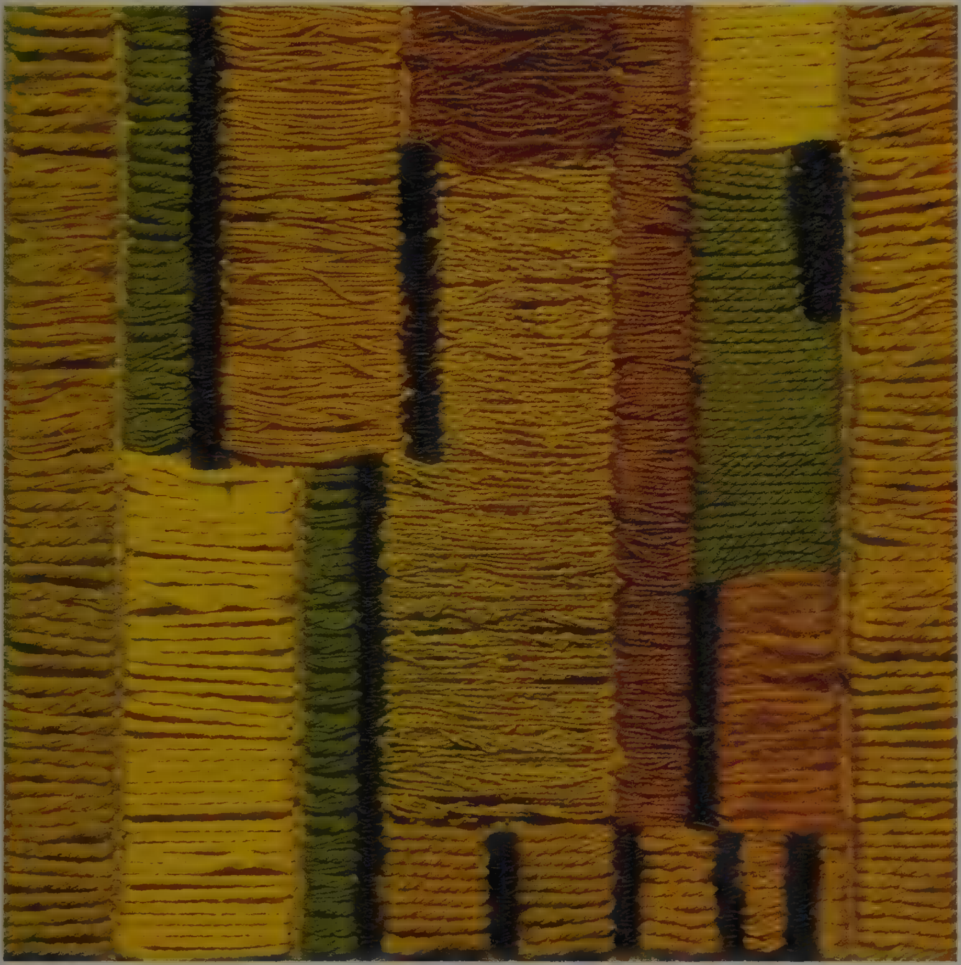




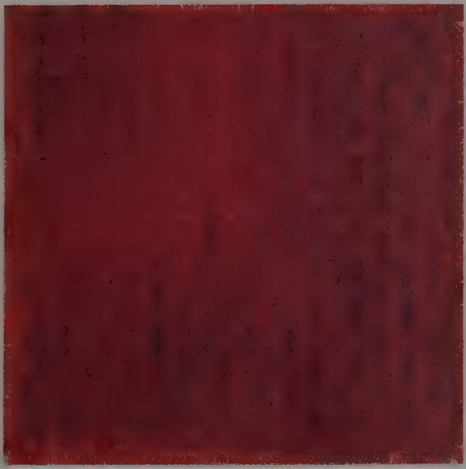
The creative possibilities of traditional embroidery techniques are examined in elementary exercises independent from decorative usable objects. Appropriate support materials are embroidered partially or completely with varying thread qualities and colors. The abundance of materials, colors, and techniques requires limitations in the initial exercises. Fundamentally, the resulting textured surfaces and forms are developed by interrelating elementary embroidery techniques and the actual characteristics of the materials.

The small illustrations show, above, altering a screen net with running stitches and black wool; below, a composition with running stitches and various natural-colored materials on burlap.

This free monochromatic composition exhibits loose backstitching in white wool on linen fabric.

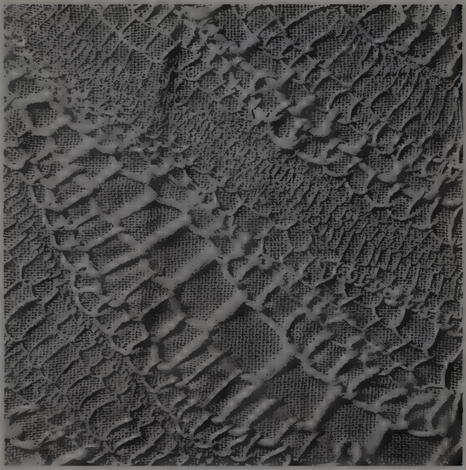


Horizontal-vertical composition in satin stitch in the same direction and various thread material of a selected color area.

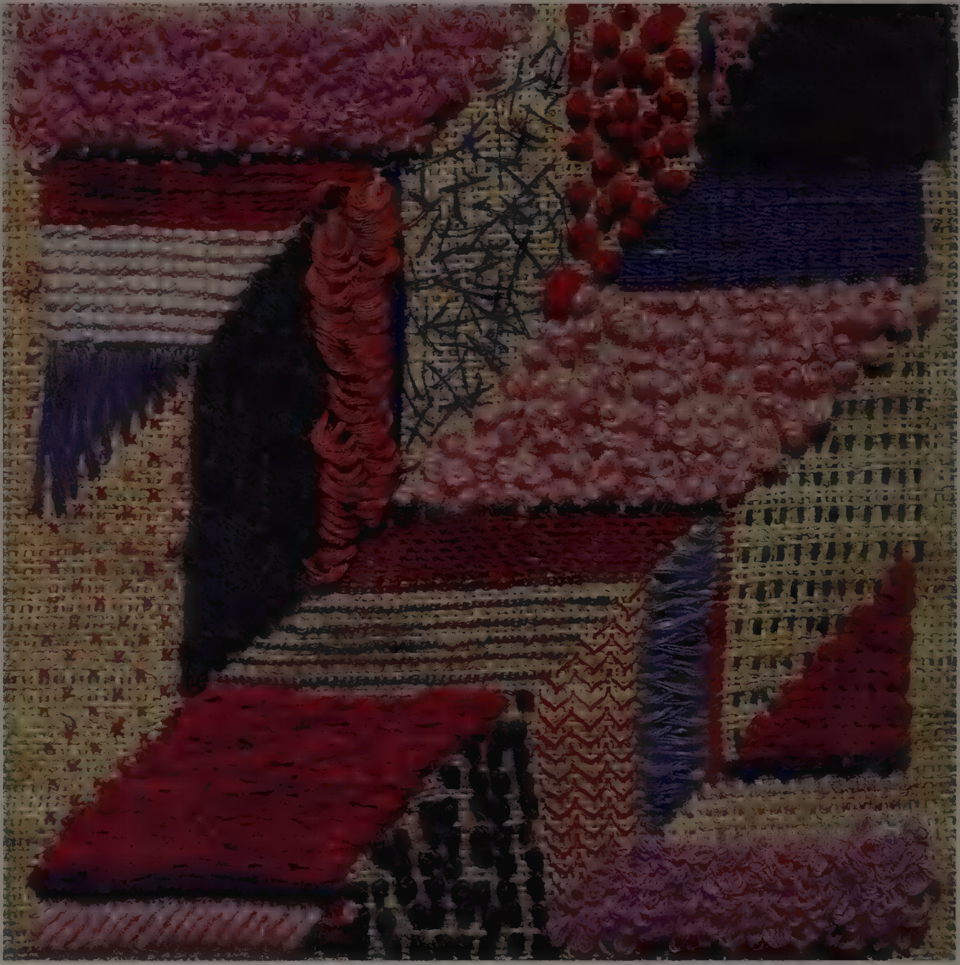


The small satin-stitch examples show, above, a rhythmical composition structured in diagonals; below, a checkered structure layered in different densities.

The three photographs show, from left to right, different stitching techniques on net: running stitch, backstitch, and free stitching.

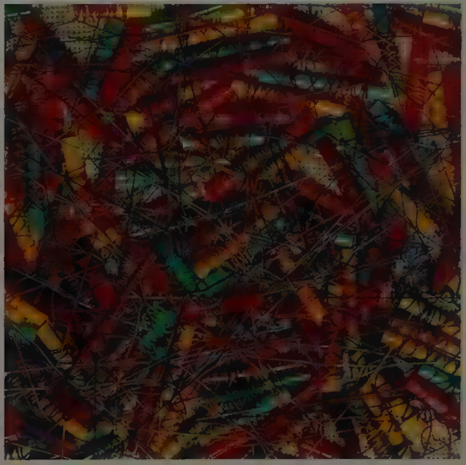


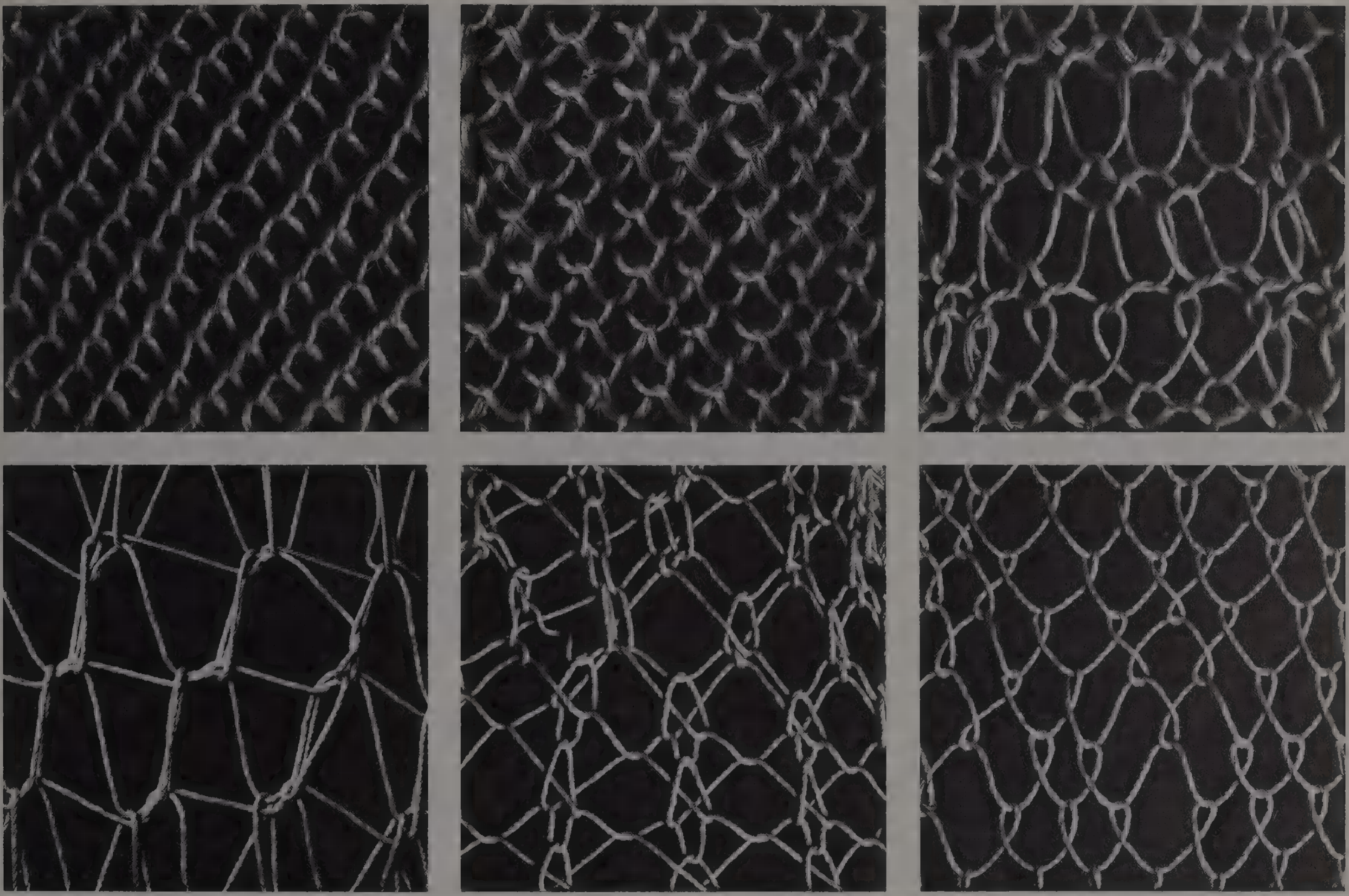
These examples of white embroidery show, above, a structured surface with looped rows of different materials; below, differentiated groupings of radiating satin stitches.



This composition contains many different surface densities, material qualities, and colorful embroidery stitches.

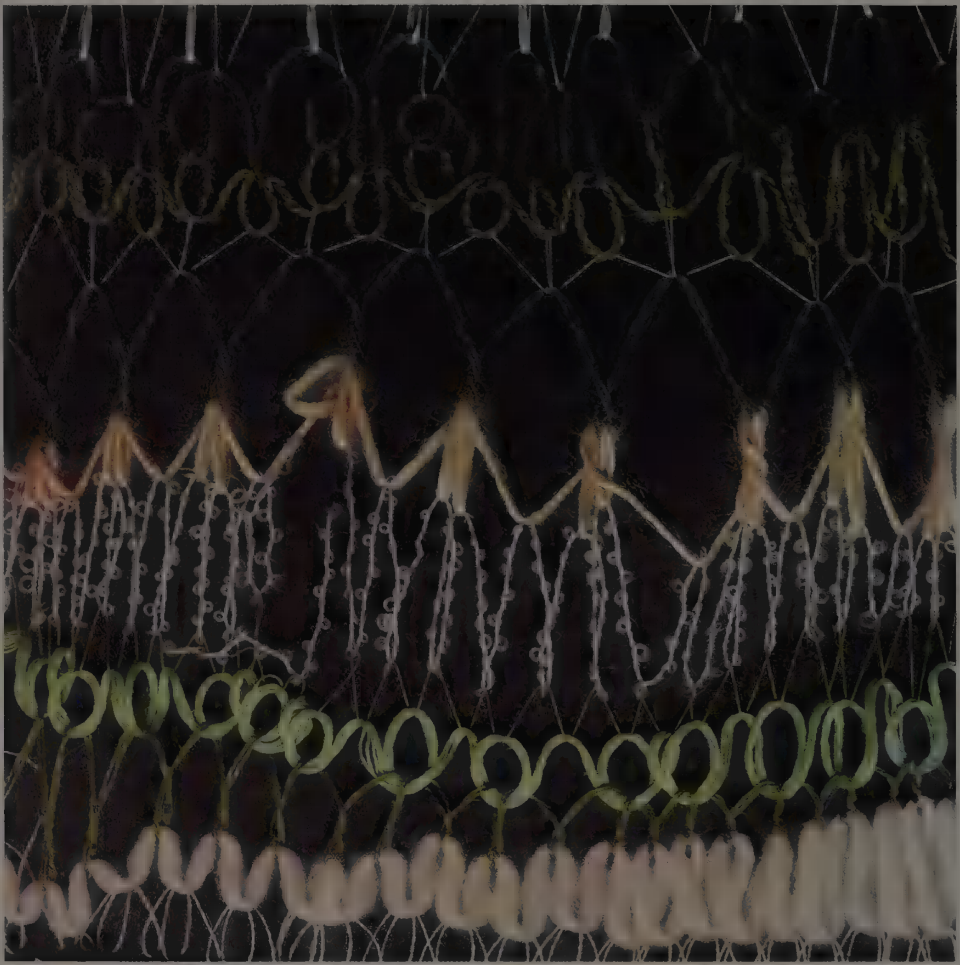
In the examples below nontextile materials (glass beads and plastic rods) are appliquéd over textile surfaces.

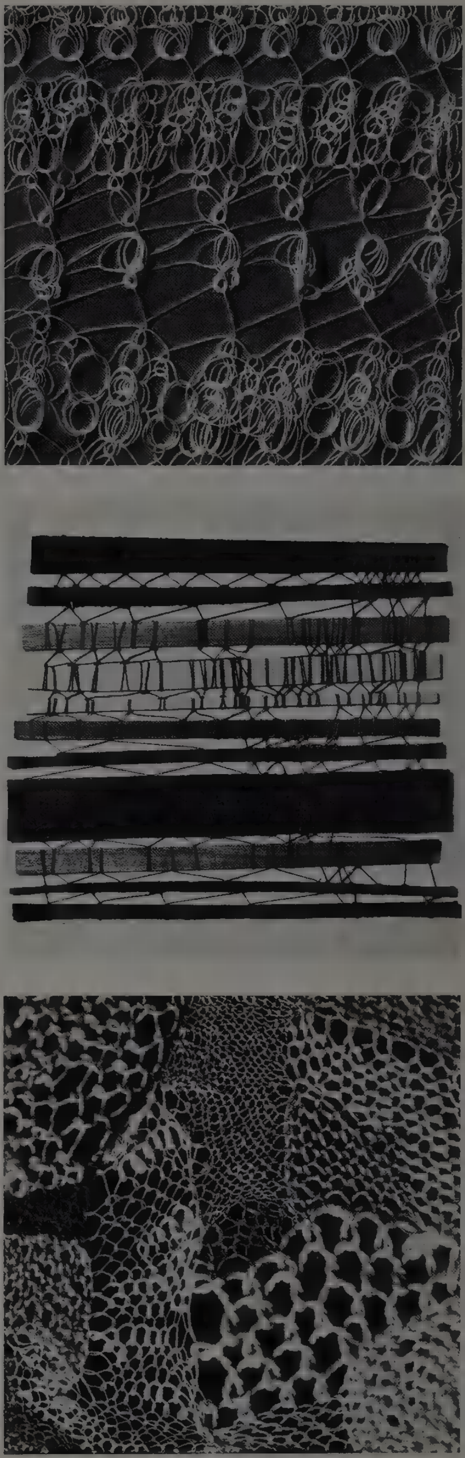




Textile structures can be developed by using linking and looping techniques on stretchable mesh fabrics. Many creative possibilities can be found by combining and interrelating techniques, materials, and colors, and by adding passive elements, such as paper strips, drinking straws, and threads.

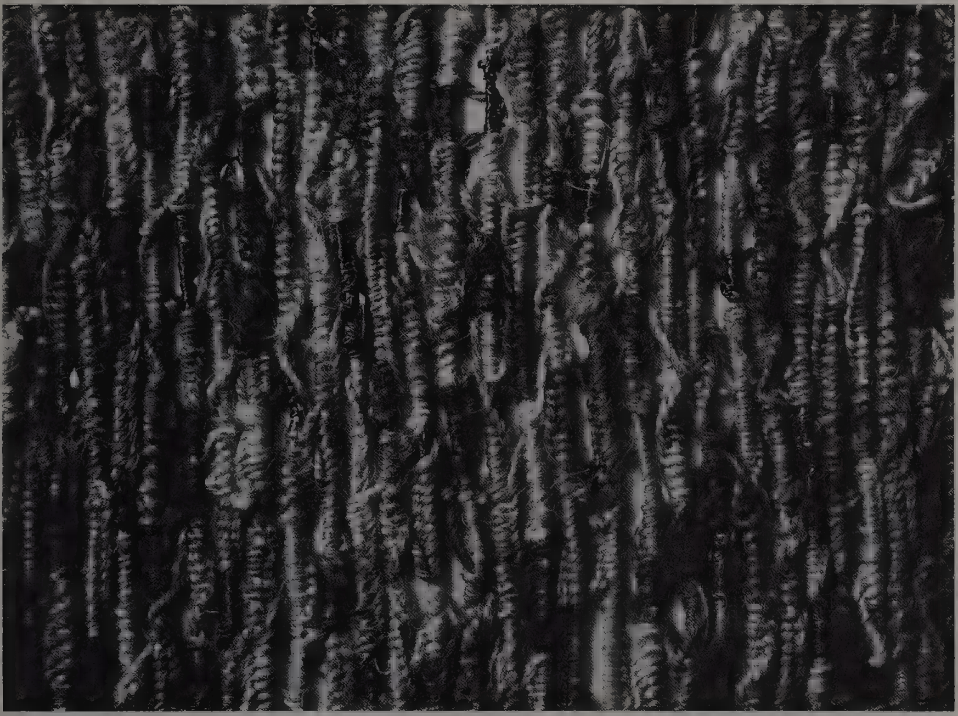
The single studies exhibit linking and looping techniques: above, the simple linking of equally spaced elements; on the right, unequally spaced elements; below, discovered variations on linking and looping.

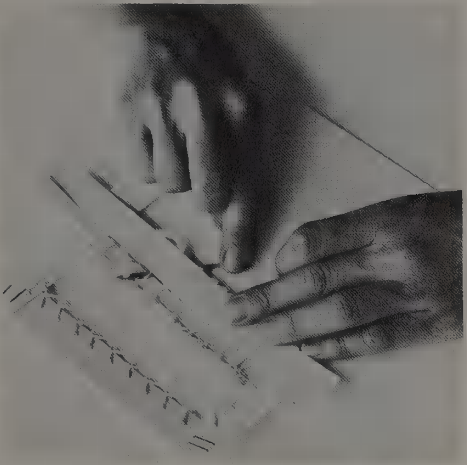


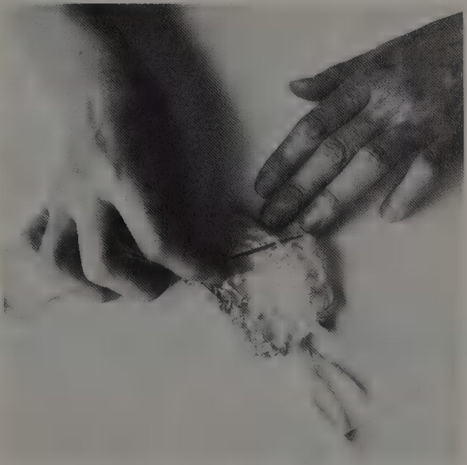


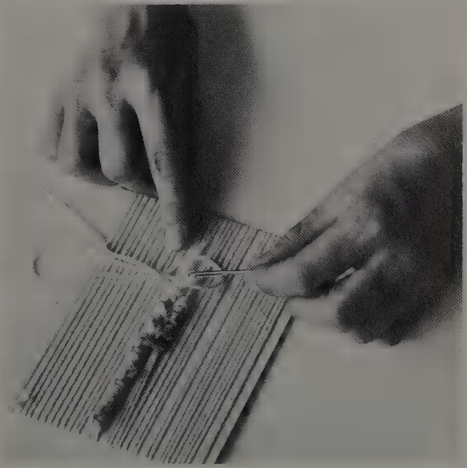
This rhythmic, colorful composition consists of variations on linking and looping in different materials.

The three examples show different ways to organize compositions: above, many densities are formed by varying the looping technique with a single material; center, veneered strips act as a passive foundation element for looped threads; below, different textures are created by looping numerous materials.



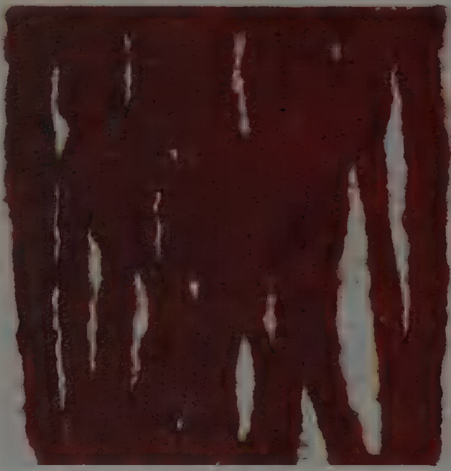


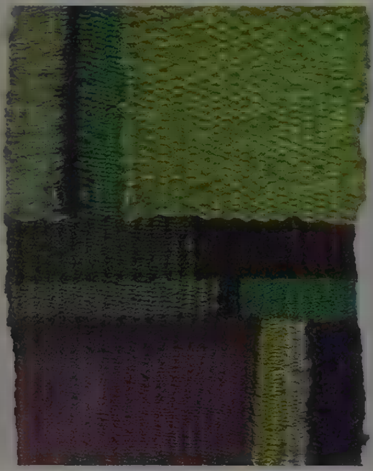


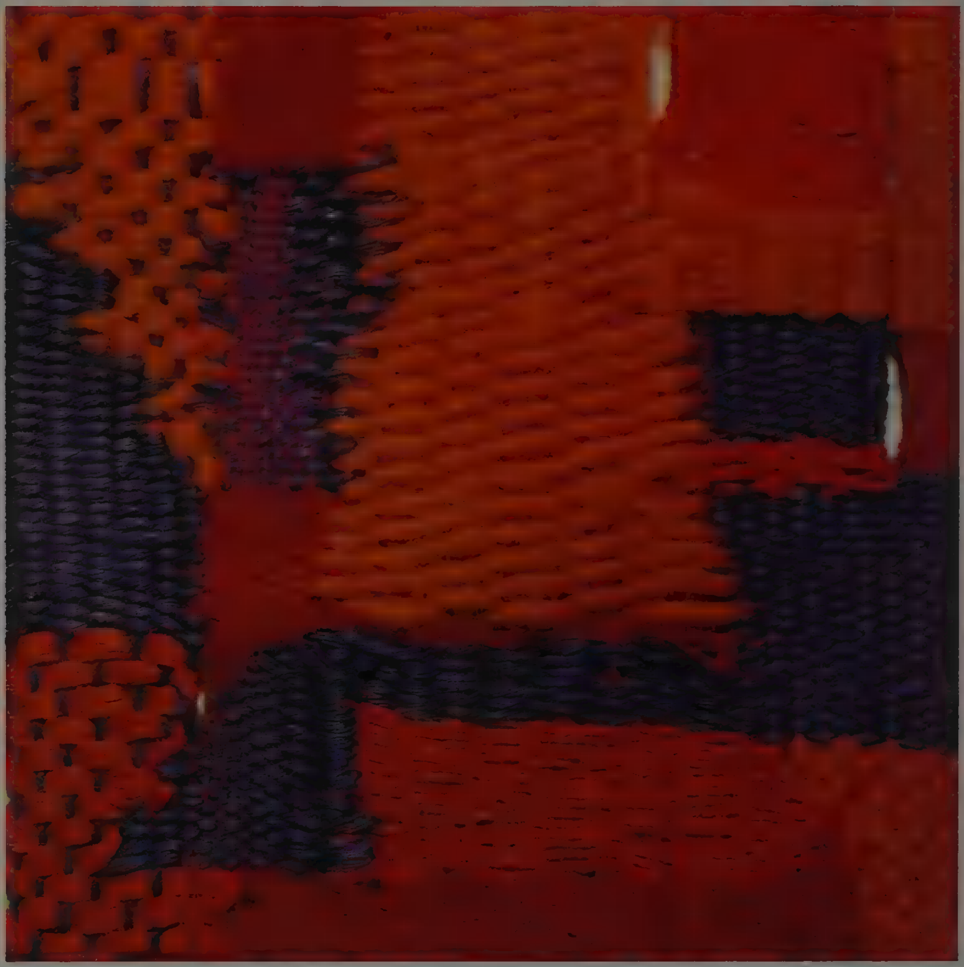


These carefully composed examples were achieved by looping and wrapping different materials over a foundation.

Different techniques are shown: from top to bottom: linking and looping around passive support elements, free looping in rows, and wrapping warp threads.



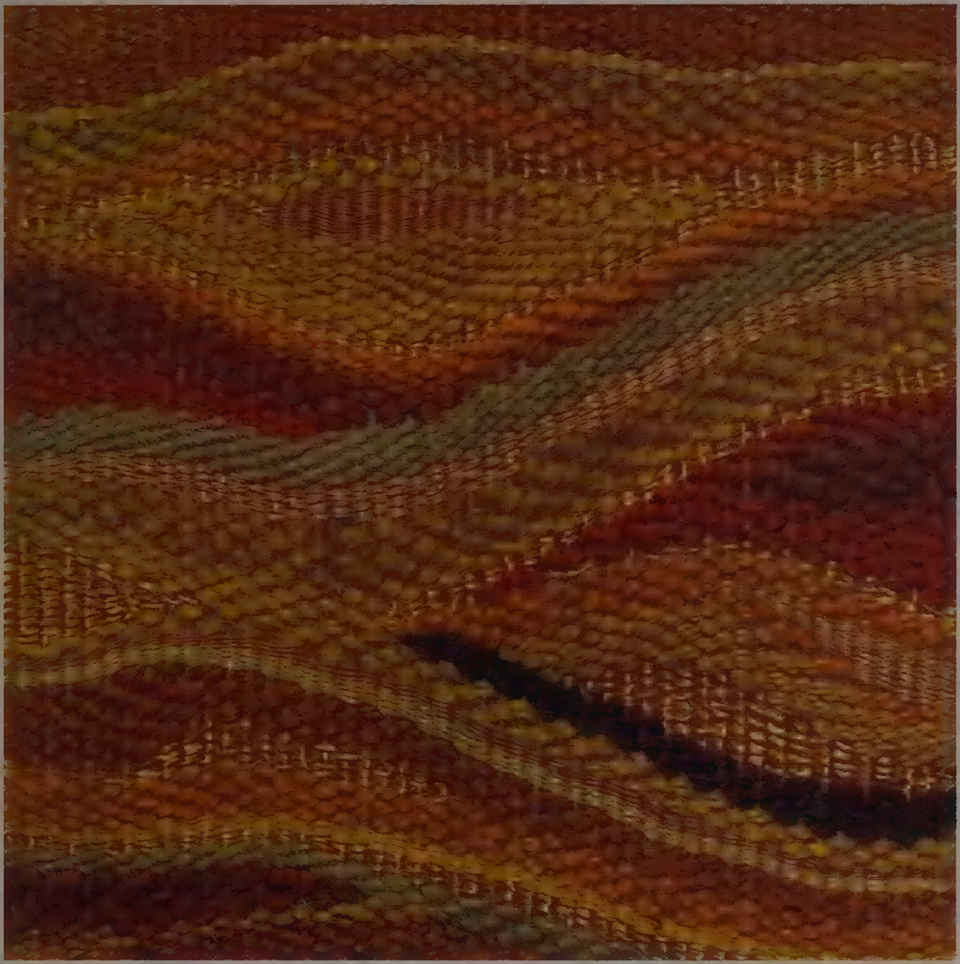




In the following exercises simple fabrics are woven on wooden frames, using different weaving and weft-wrapping (soumak) techniques. The textures develop from the technique and the raw material. They are not woven from patterns.

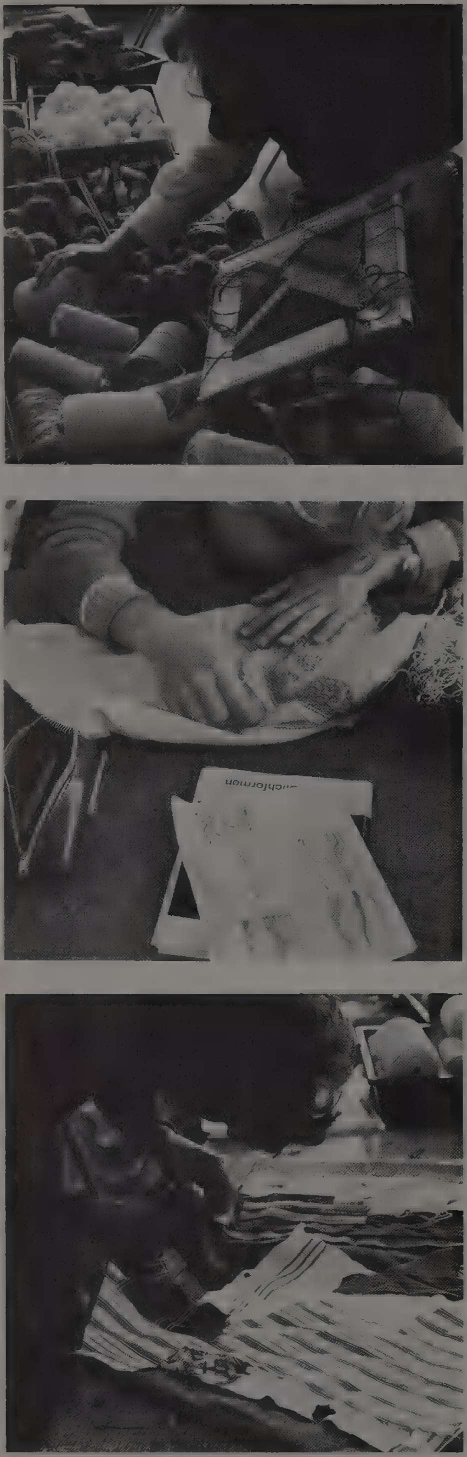
These pieces were done in slit-tapestry weaving (kilim): above left, differentiated open spaces in a single material; below left, a horizontal-vertical composition in different materials and without open spaces; above right, a contrasting composition in many materials and structures and with few openings.

The photographs show the abundance of materials at the students' disposal.

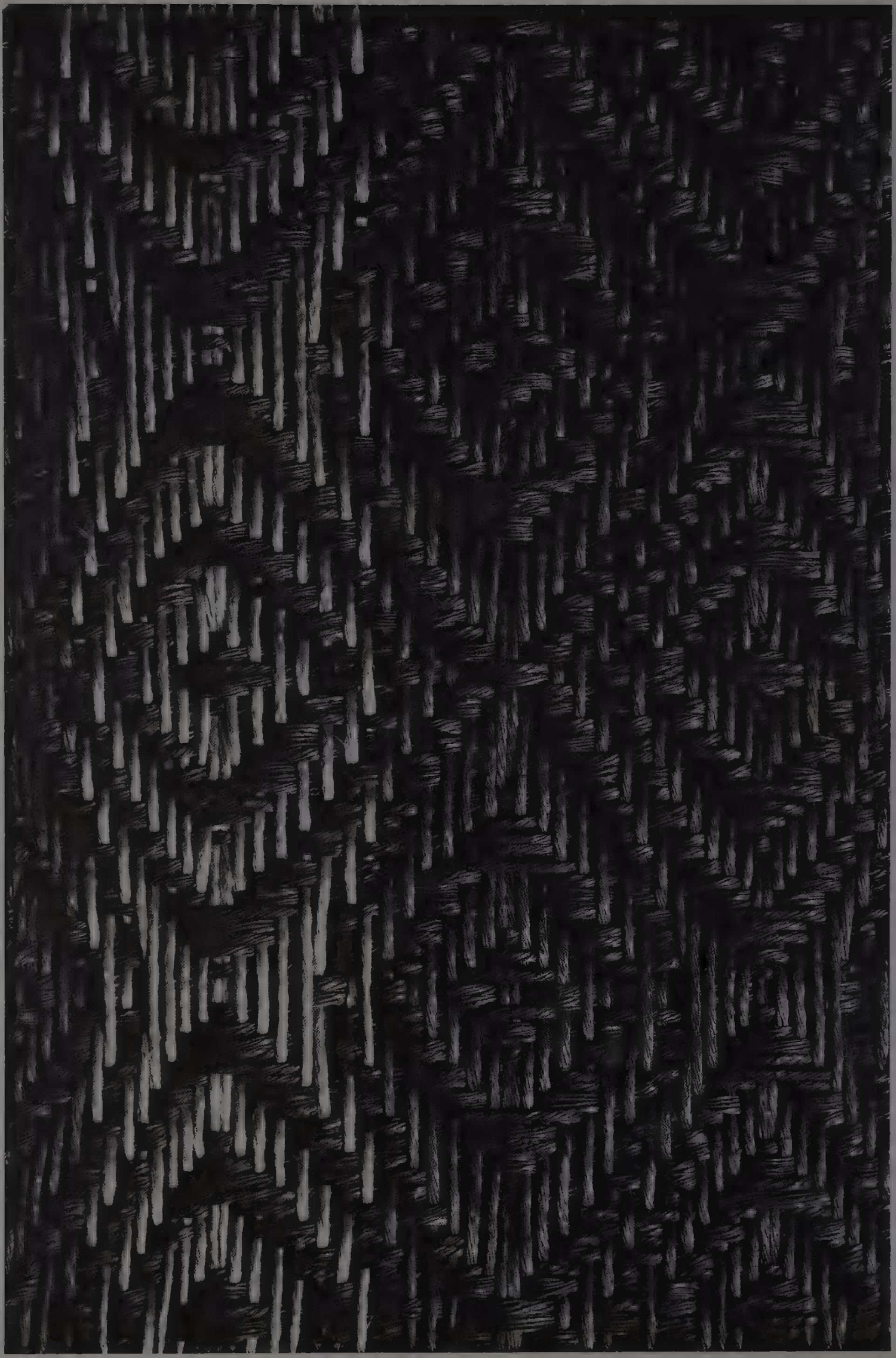


Gobelin tapestry weaving was used to create a rhythmically articulated composition of contrasting materials.

Both of the above examples show twill weave with different warp and weft colors; below is a multitextured, woven surface with a fringe technique.

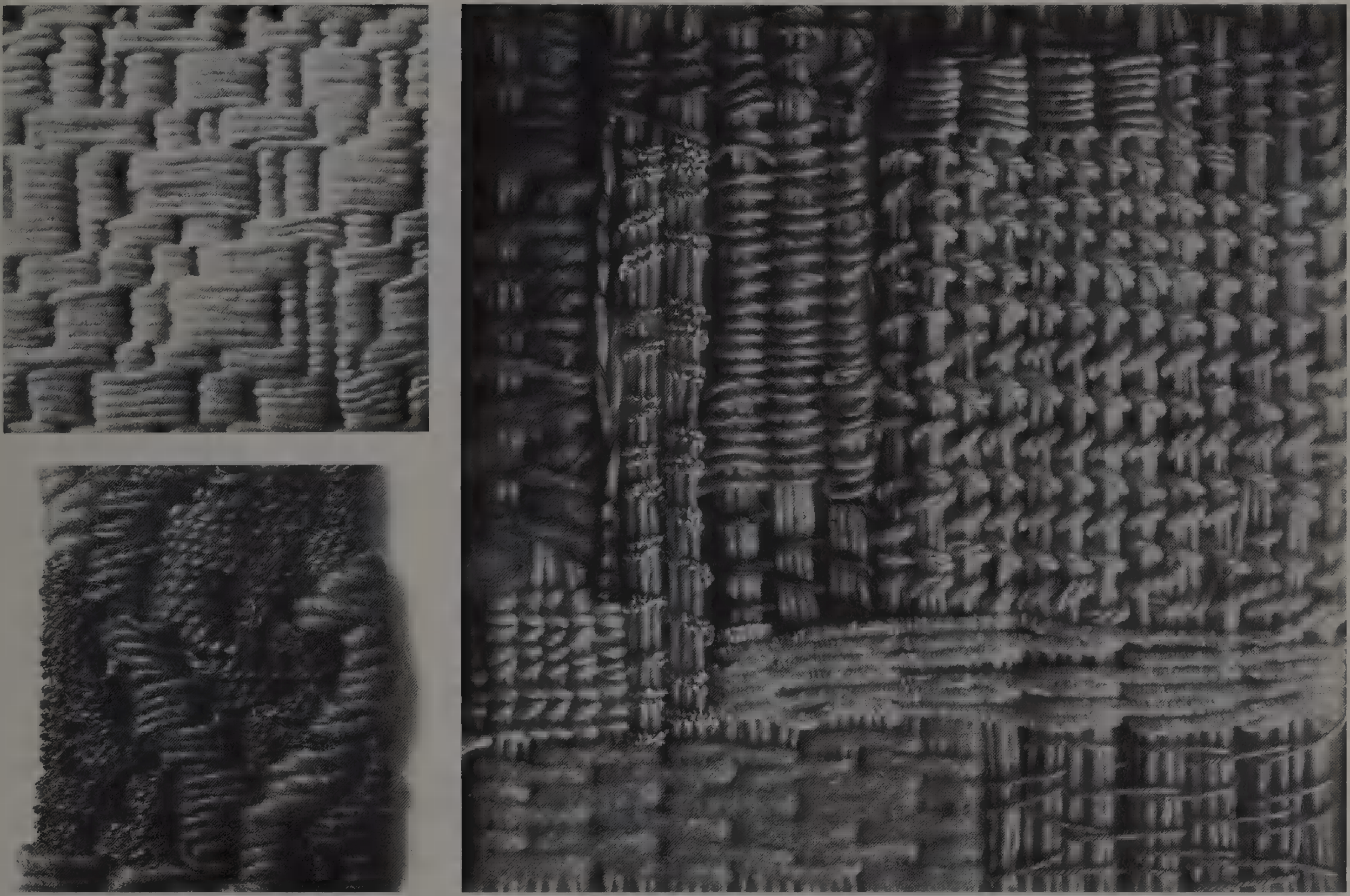


The three photographs show students selecting material and working.

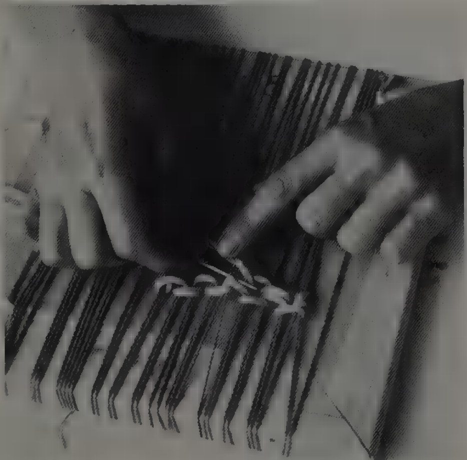


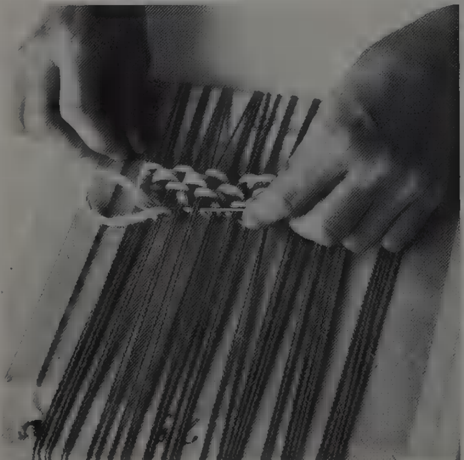
The example above shows a diamond twill woven in dark-light variations of a single color material without knowledge of weave drafting.

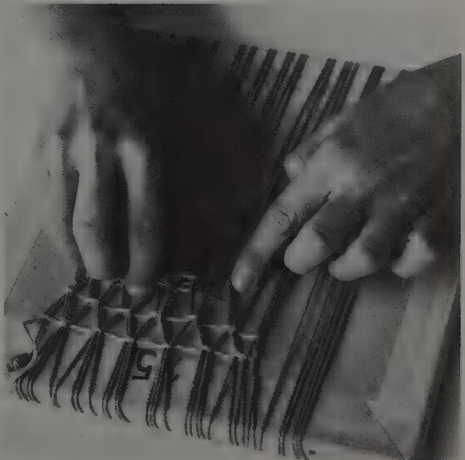
The following photographs show different soumak (weft-wrapping) techniques.

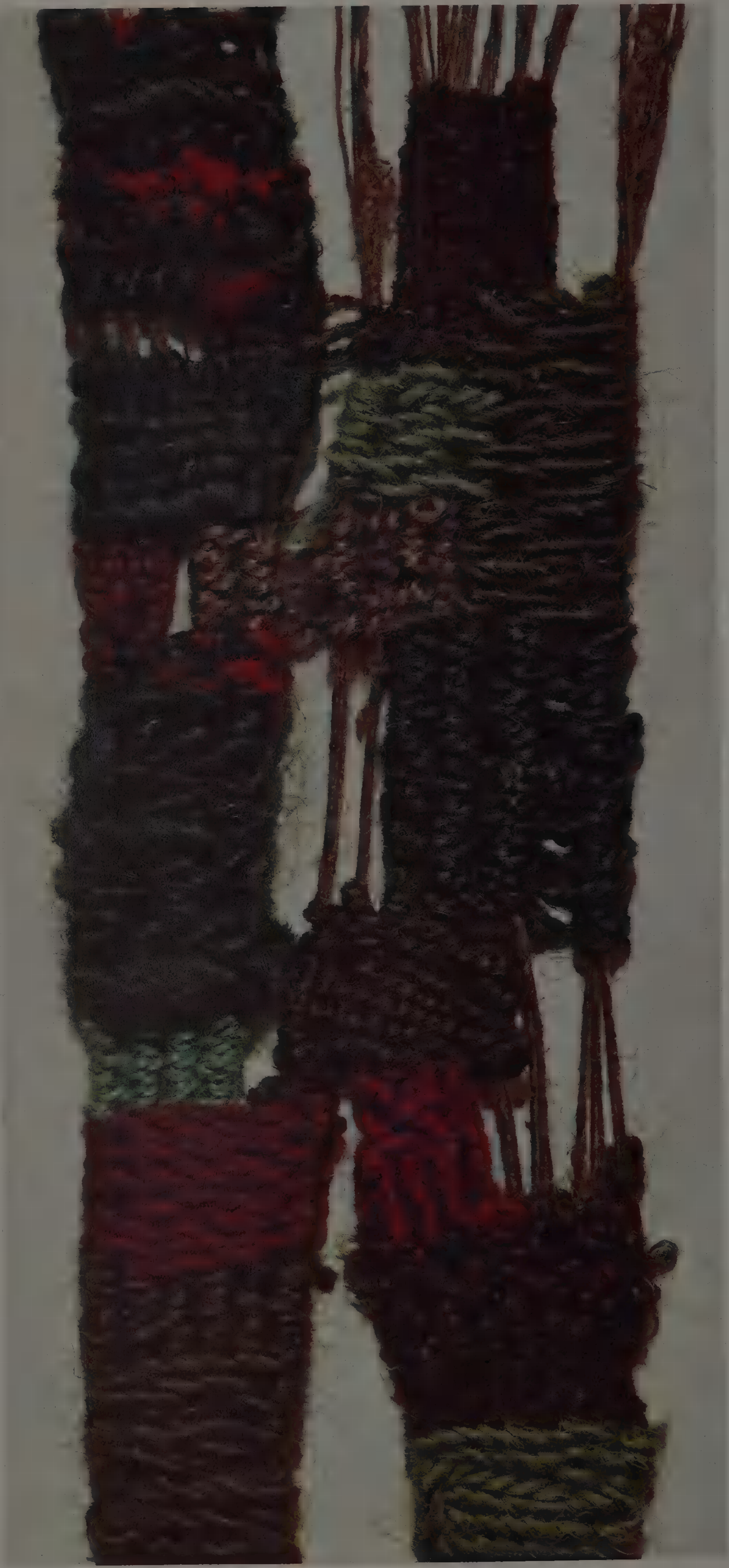


Three examples of soumak utilize different stitch lengths: above left, loosely spun wick yarn; below left, diverse materials; right, contrasting materials and a visible passive warp.









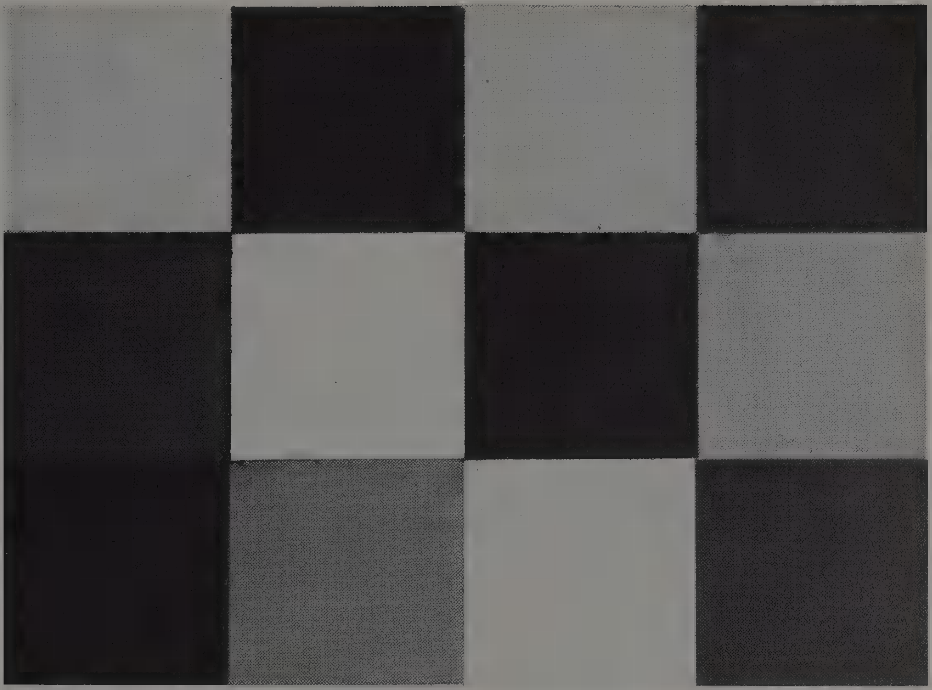
Free soumak is created by varying the weft-wrapping order, adding open spaces, and partially exposing the warp.

Color is a subjective, artistic means of expression, and its creative manipulation with simple tools is the basis of this course. The aptitude for color and its expression is stimulated and developed by technical knowledge of color as material: opaque paint (poster, gouache, tempera), aquarelle, and printed or colored paper (collage) applied directly to a prepared surface. In many nonobjective exercise possibilities of statement and formulation are discovered through unprejudiced, playful experimentation.

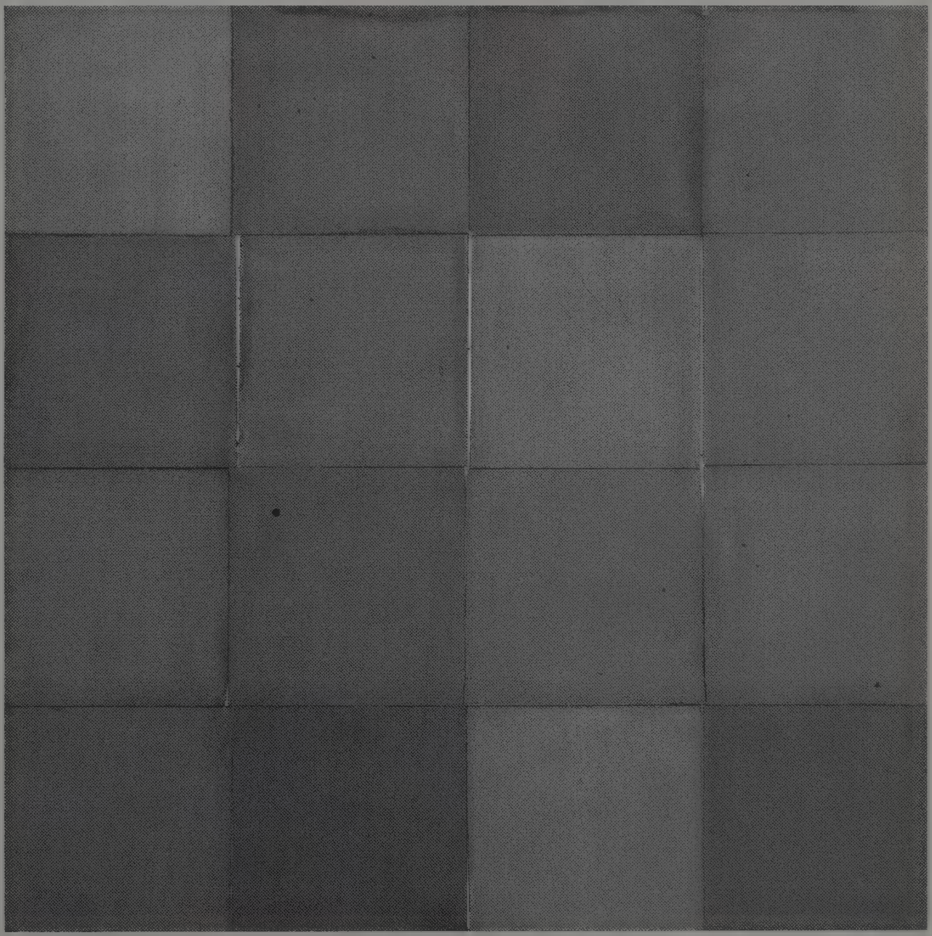
The course is structured with these concepts: color consistency (watery, dry, glossy, opaque, impasto), means of expression (brushes, treatments, painting surfaces), formal qualities (shape, line, point, texture), color qualities (bright, dull, warm, cool, tone), composition (many-few, large-small, long-short, light-dark), and combinations of the preceding sections.

In order to control the many variables, new limitations are set for each exercise by both teachers and students on the kind and number of colors, forms, techniques, compositions, themes, and statements that can be applied. Advanced students can set their own limitations. Evaluation of conscious, nonobjective, expressive, and intuitive solutions is based on comparing the many variations produced by the students. Independence and sensitivity to self-criticism are developed with intense, increasing involvement in the course.

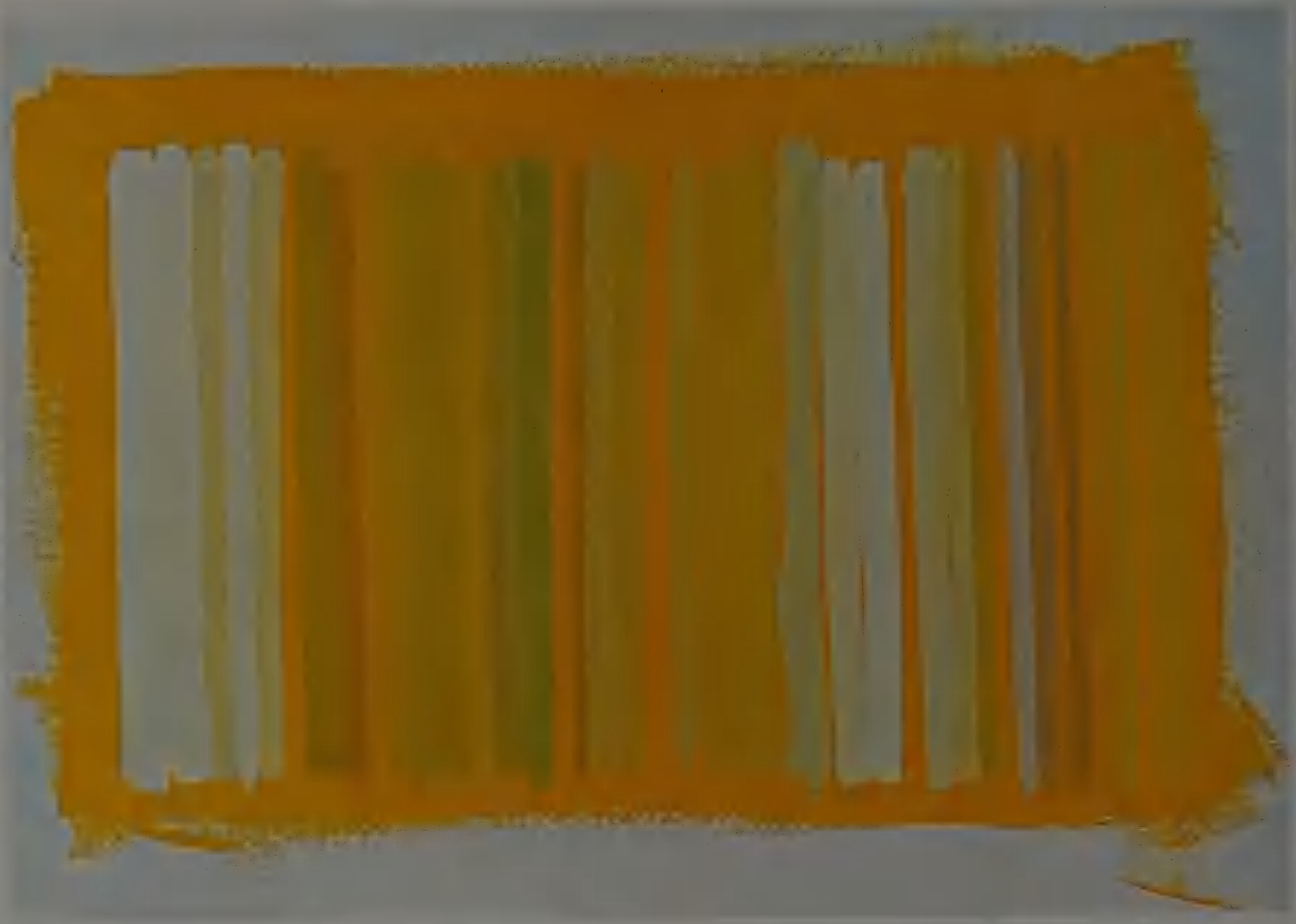
In the first exercises opaque techniques are used with tempera (gouache or poster paint), and elementary creative possibilities are expressively worked. At the beginning students learn to apply the paint correctly to a ground divided into squares. Skillful application involves the following prerequisites: the relationship of the paint to the diluting agent (water) produces the opacity of the color; the constituents of mixed colors must be thoroughly stirred; before applying the paint the quantity must be measured properly; the ground surface must correspond to the nature of the paint; brushes must correspond in quality and size to the consistency of the paint and the prepared surface.



In the examples painted squares are cut out, grouped together, and glued into simple compositions. Above, light and dark colors are contrasted; below, colors of equal value are used.

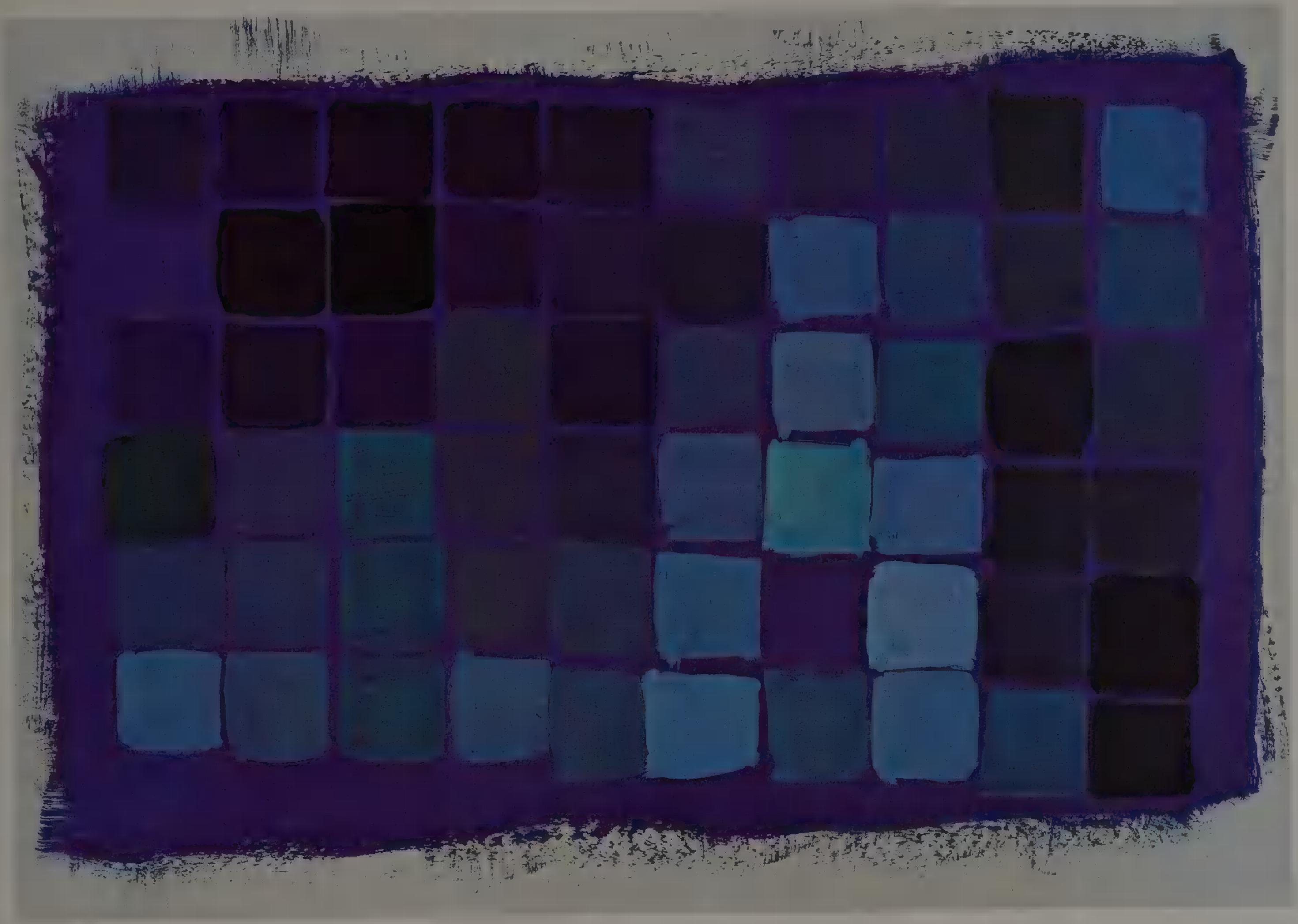


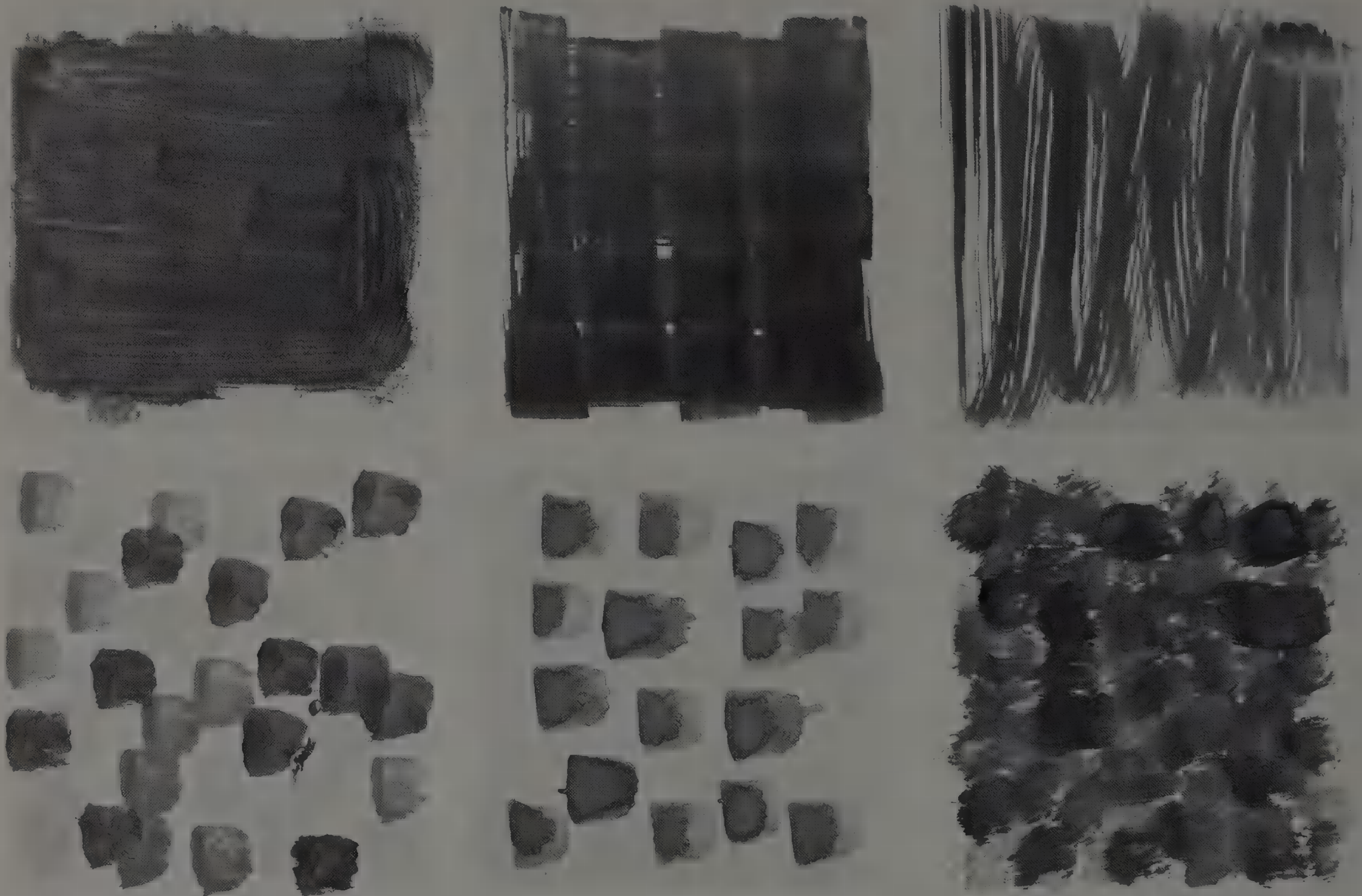
In this composition, composed of square elements, the applied color is diluted to different degrees, producing various opacities.



In further exercises differentiations within a single color area are investigated. Opacity is achieved by painting over previously colored areas.

The examples here and on the preceding page show: variations of opaque reds on two different aqueous grounds, differentiated color strokes on a flat, uniform yellow ground, variations on an opaque, flat blue ground.

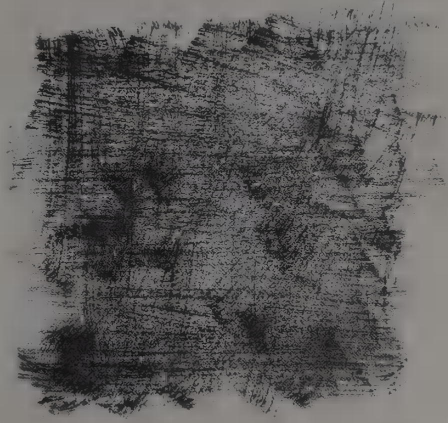
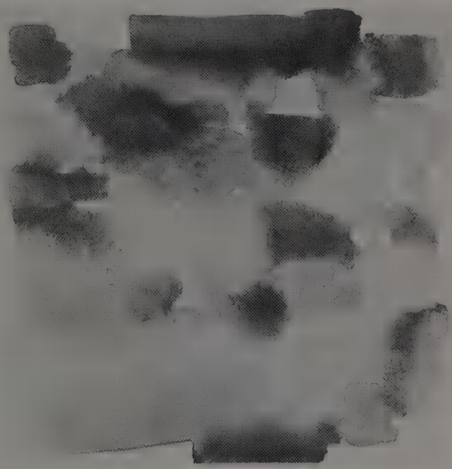
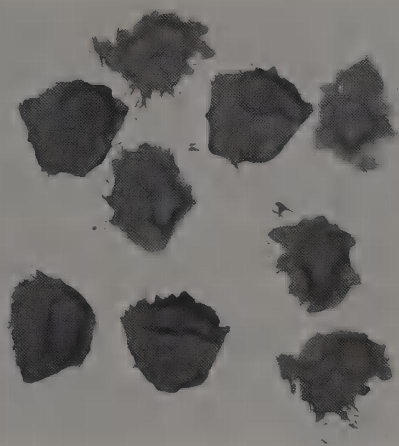
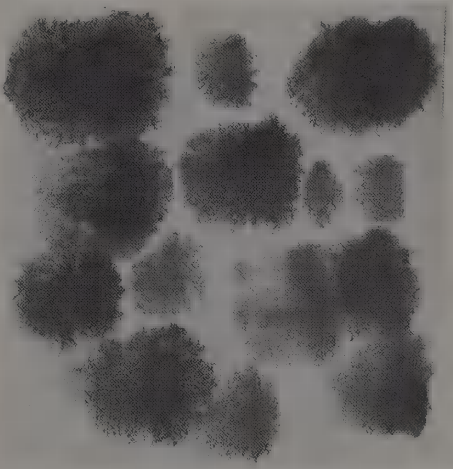


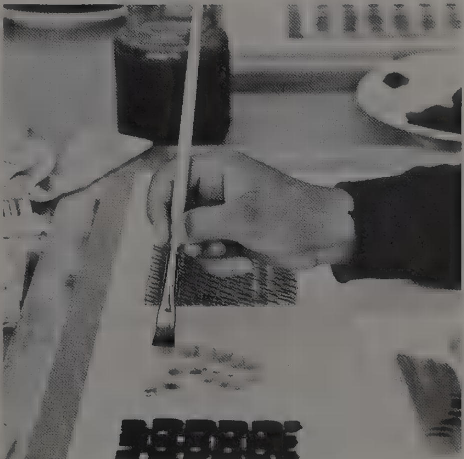


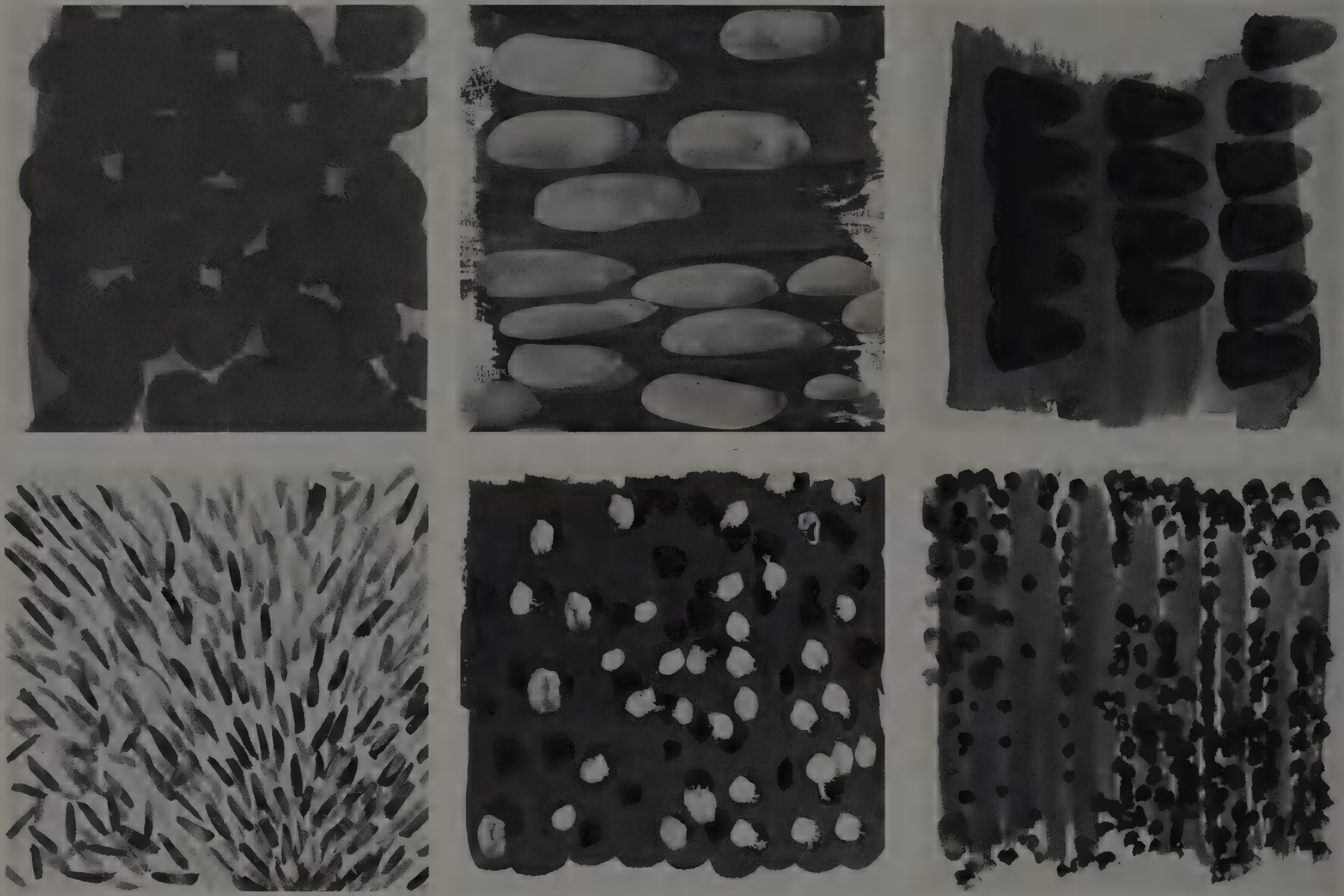
In the following exercises creative possibilities with tempera are investigated. The nature of the ground, color, brushes, and method of application are variable factors that can be playfully combined in numerous ways. The painting process is a sensual, tactile experience; if all the components are spontaneously harmonized, a clear statement results. Free, fluid brushwork is as essential as concentration, clear thinking, and technical control.

The above studies were produced with different brushstrokes, using a flat bristle brush and the respective paint consistency.

The following photographs show the teacher and students at work in the classroom.

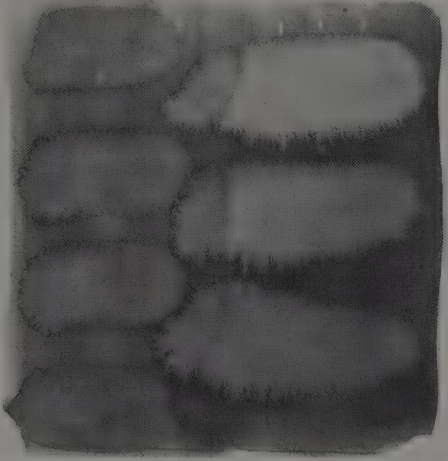





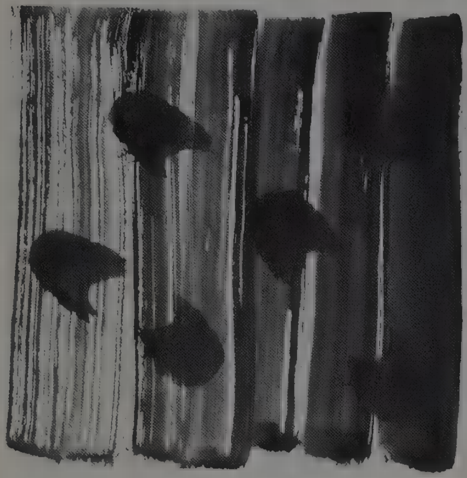


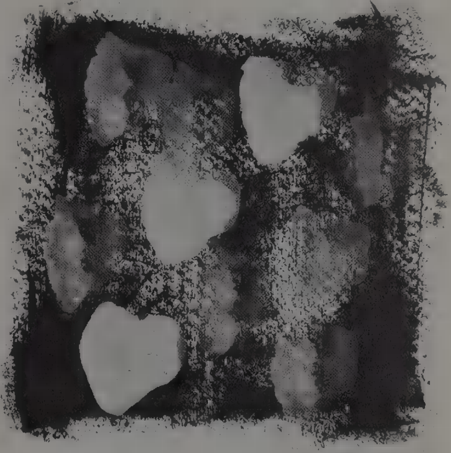


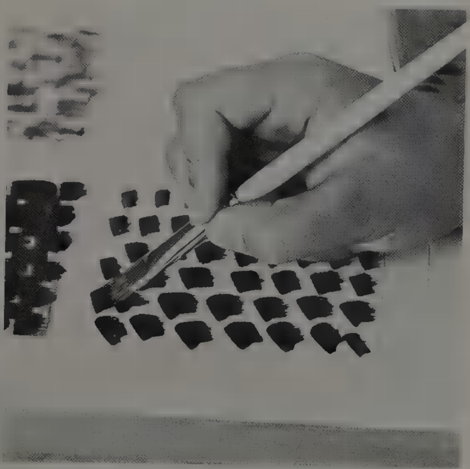
The above examples were done with different brushes and paint consistencies on differently structured ground surfaces. Overlapping textures and variations in color contrast were employed.

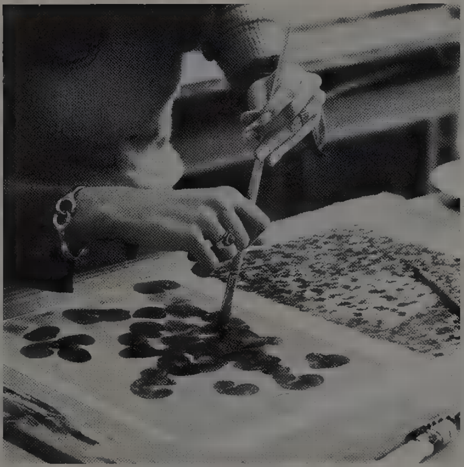
The photographs below show how spontaneous brushwork, material, and brush structure directly affect texture.

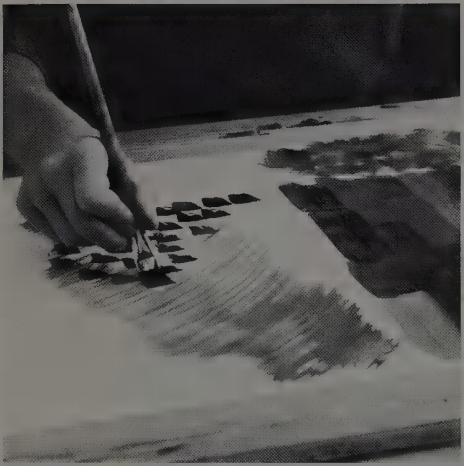


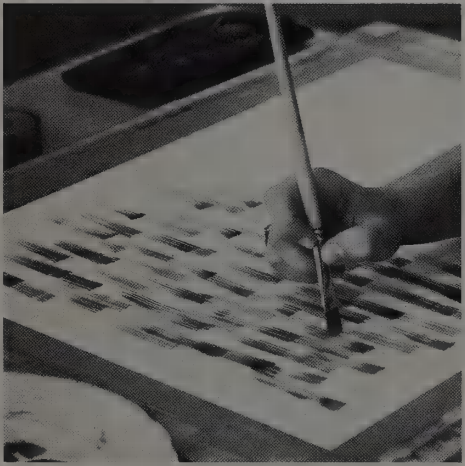


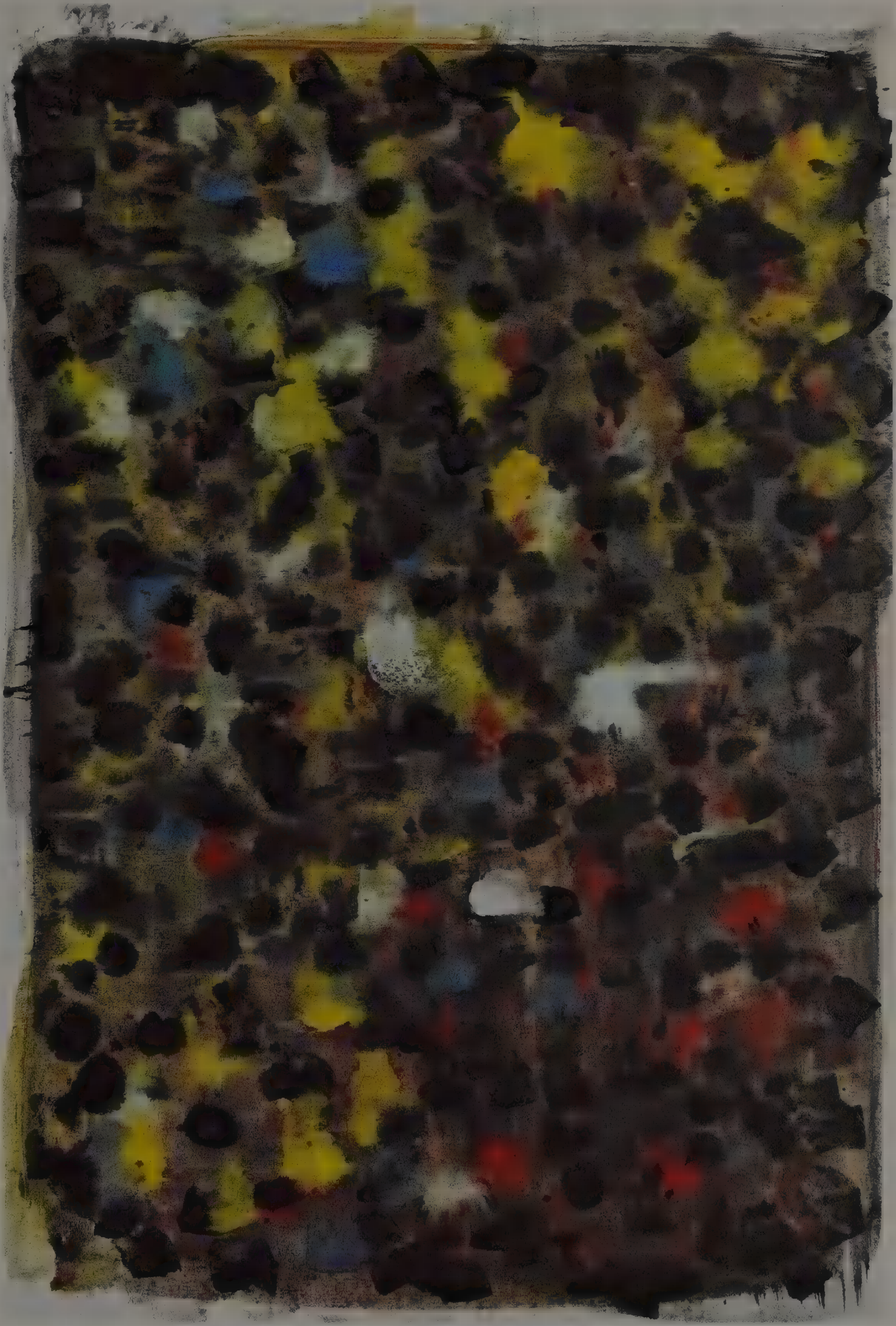










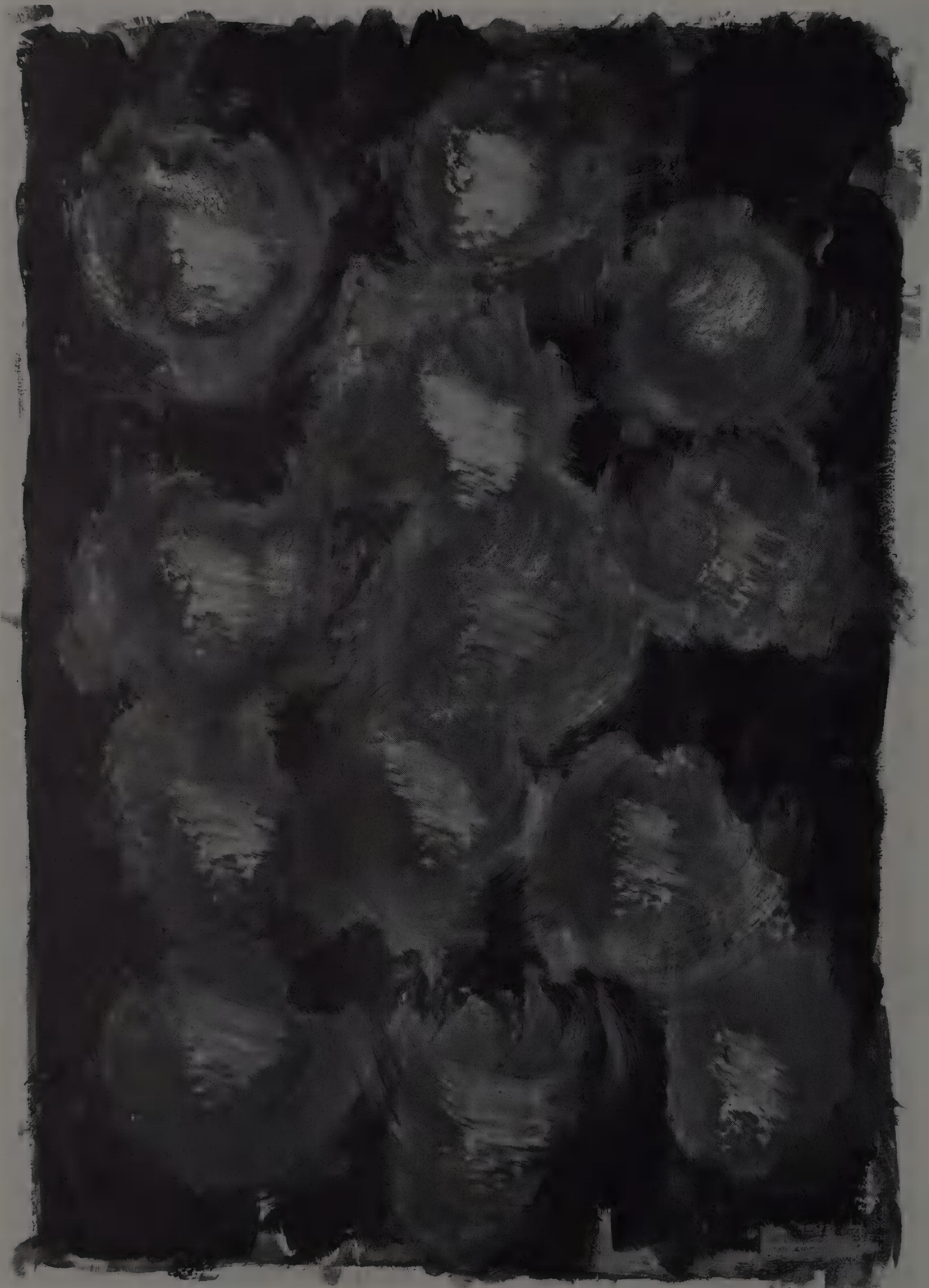


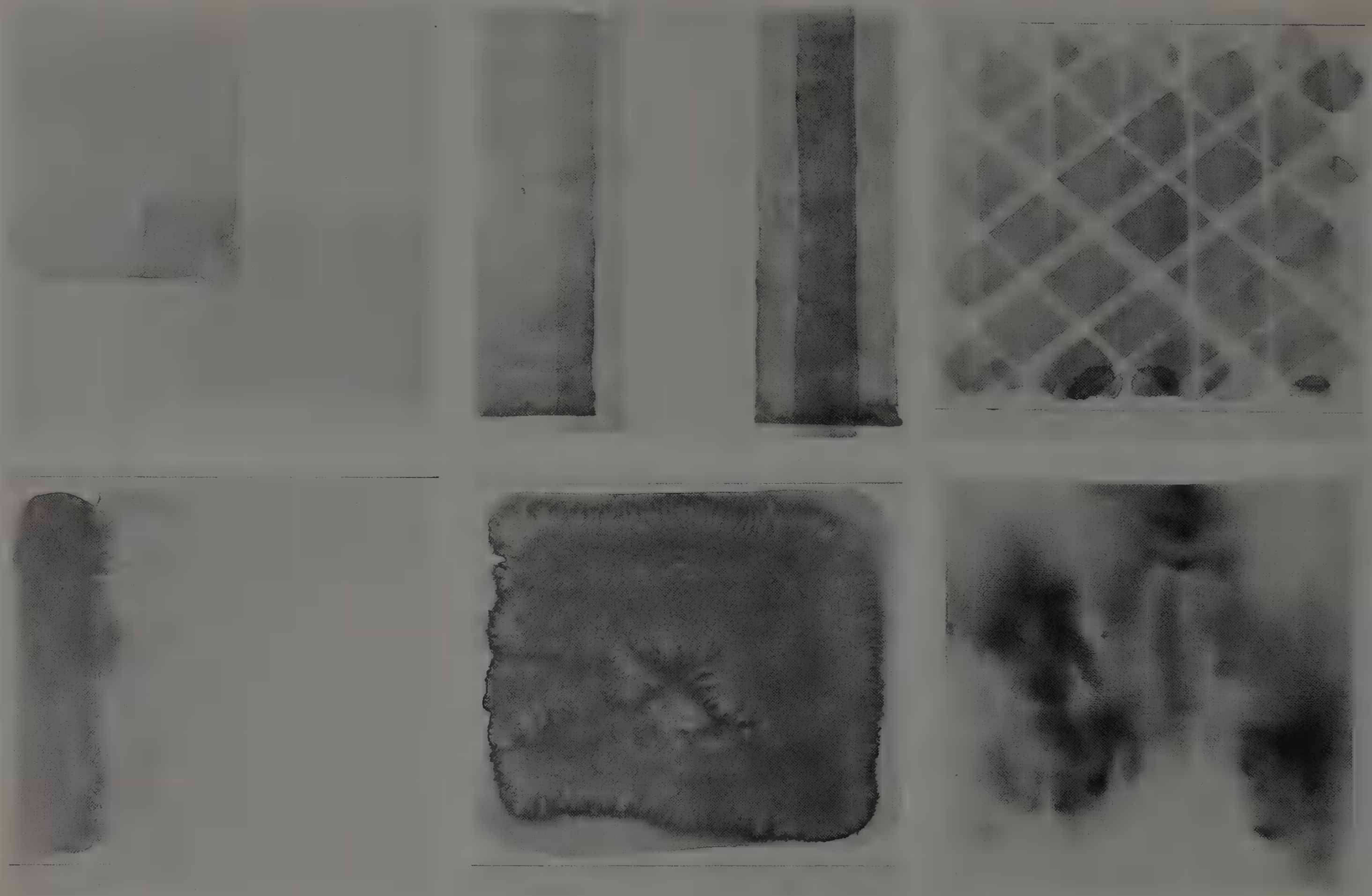
The above photographs show the working method for large-format compositions.

In the preceding exercises individual studies are worked into a large-format composition that makes a personal statement. During the painting process unexpected, surprising effects are produced that should be included in the compositions. A clear solution often requires the student to repaint an area several times or repeat the entire work.

Through experience the student develops control of the subjective, expressive medium. In further exercises thematic problem solving is directed towards a particular goal. Conceptual oppositions from the senses of touch, hearing, and taste (light-heavy, quiet-active, loud-soft, sweet-bitter) are interpreted in terms of color texture.

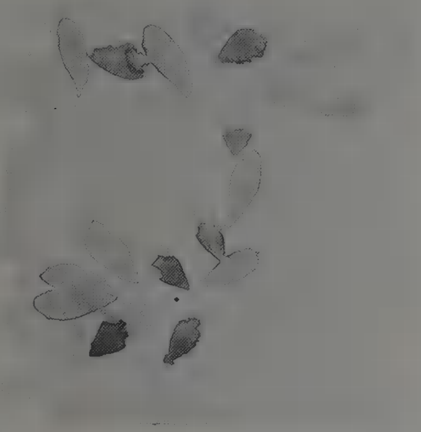
The examples here and on the following two pages show various compositions with differentiated structures and repainted overlapping textures.

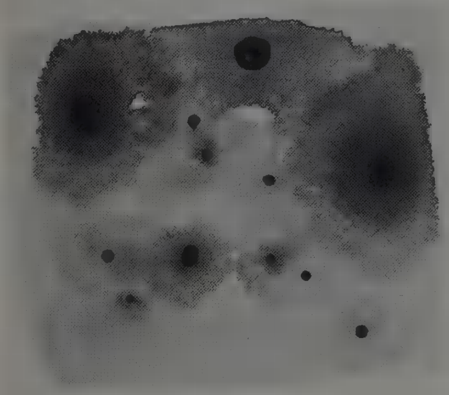


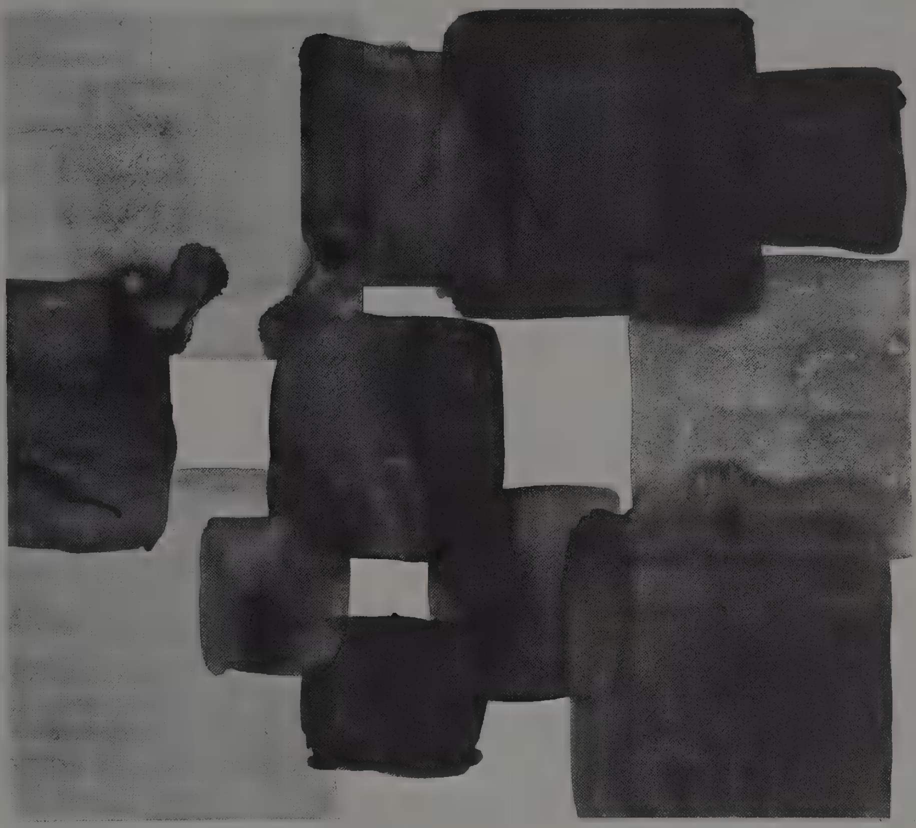


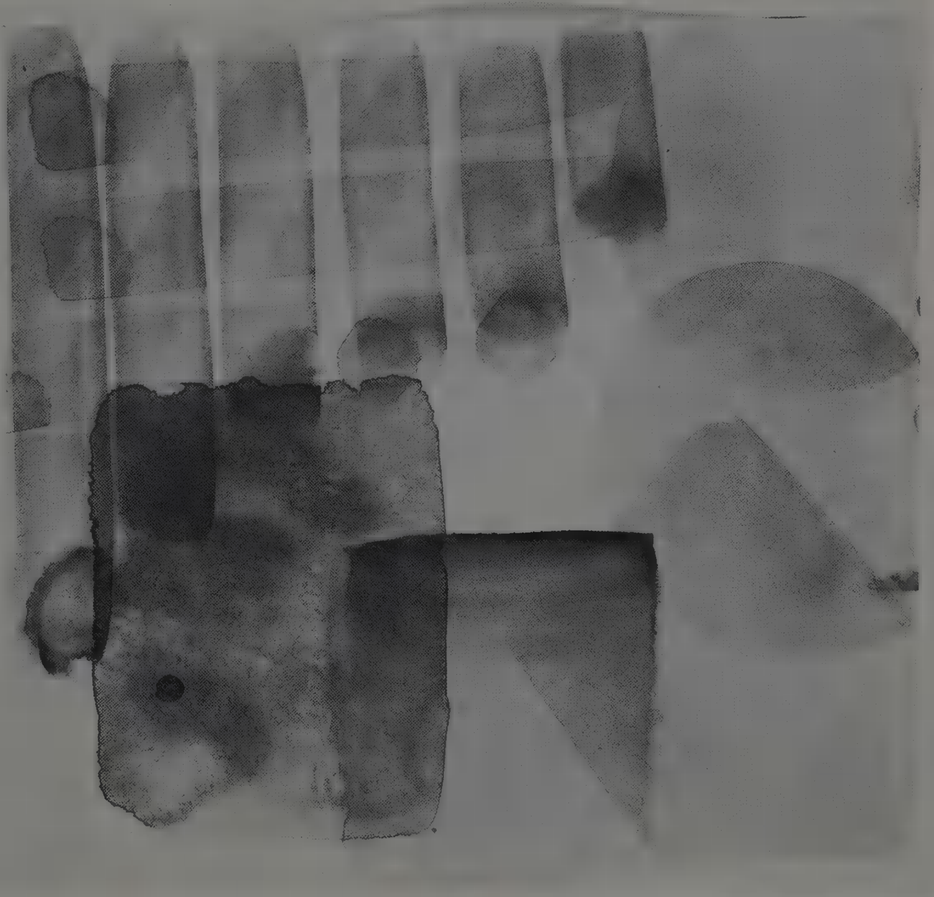
In contrast to heavy, opaque tempera color, the transparent glazes of aquarelle have a light, floating quality. In the following exercises the creative possibilities of aquarelle color and glazing techniques are examined. A transparent glaze of aquarelle color is spontaneously applied to the appropriate painting surface with a soft hair brush. Light tones are not mixed with white, but they become luminous as the translucent white of the paper shows through the diluted paint. In the glazing technique tones are formed in layers from light to dark. Light sections must be retained in the painting process. New color possibilities are produced by overlapping many glazed layers. Corrections are possible only by adding new glazes. In advanced exercises an aquarelle work is translated into the opaque tempera technique. This requires a specific, sensitive understanding of the possibilities and limitations of the two techniques.

The eight studies above show different possibilities of the glazing technique: glazing on dry and wet grounds, overlapping a dried glaze with further glazes; painting over wet glazes so that the color surfaces flow into one another.



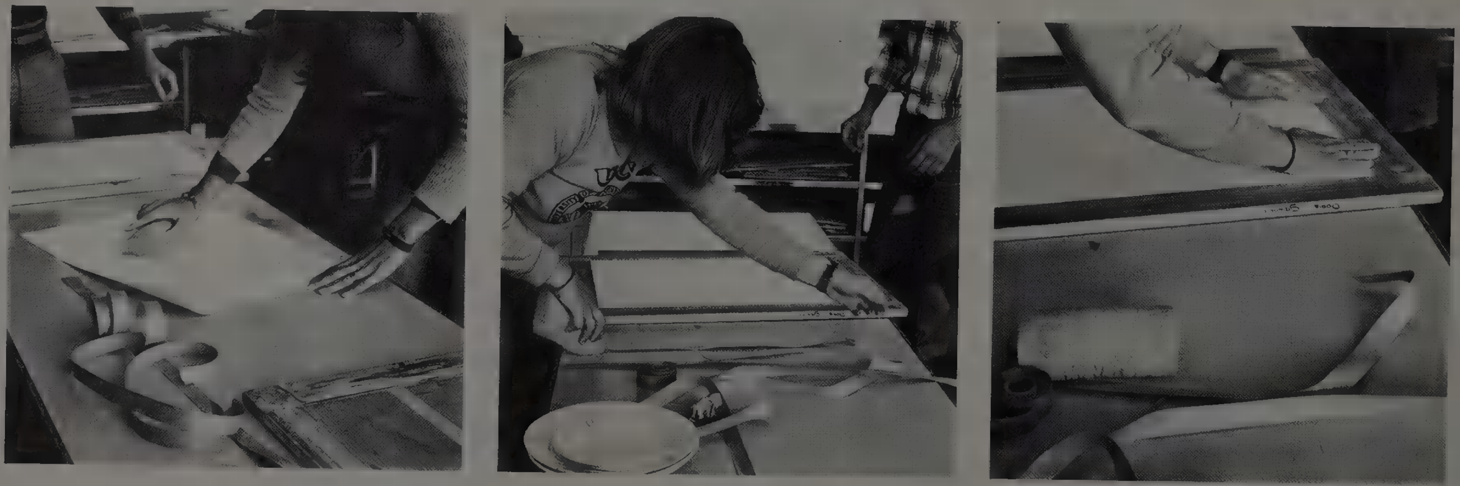


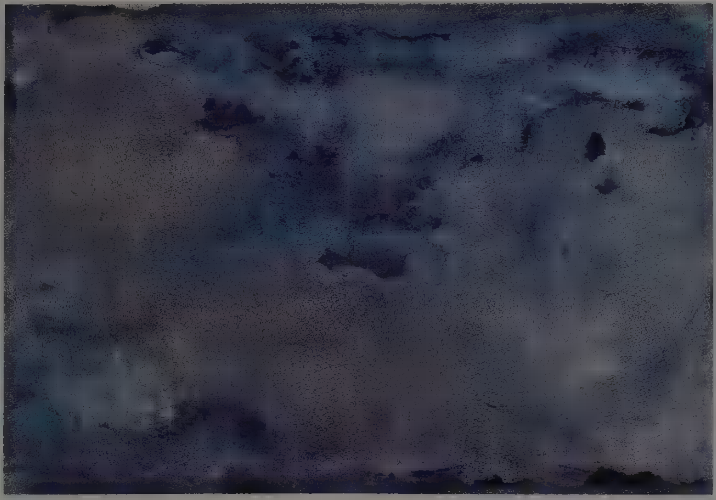


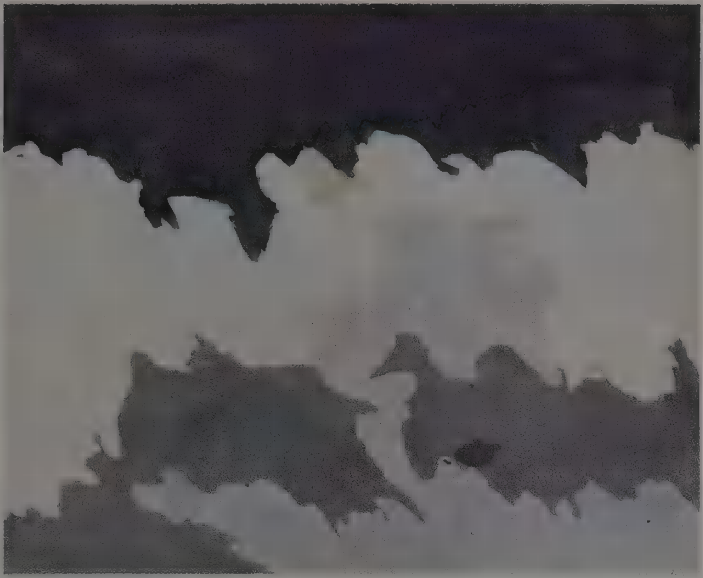


On the right and on following page are shown different large-format compositions with combined and expressive forms.

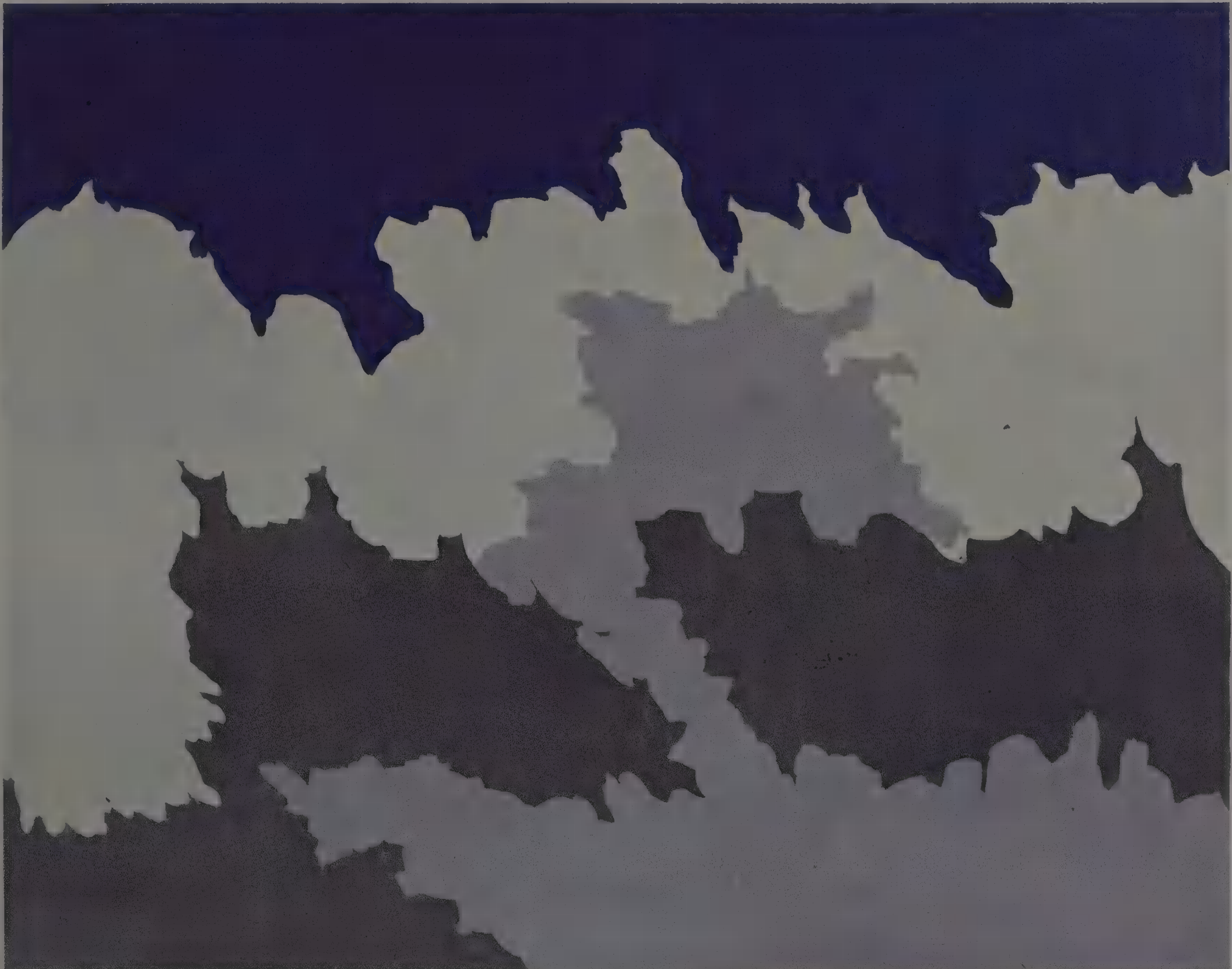
The photographs below show how to stretch the paper on the drawing board to prepare the painting surface.



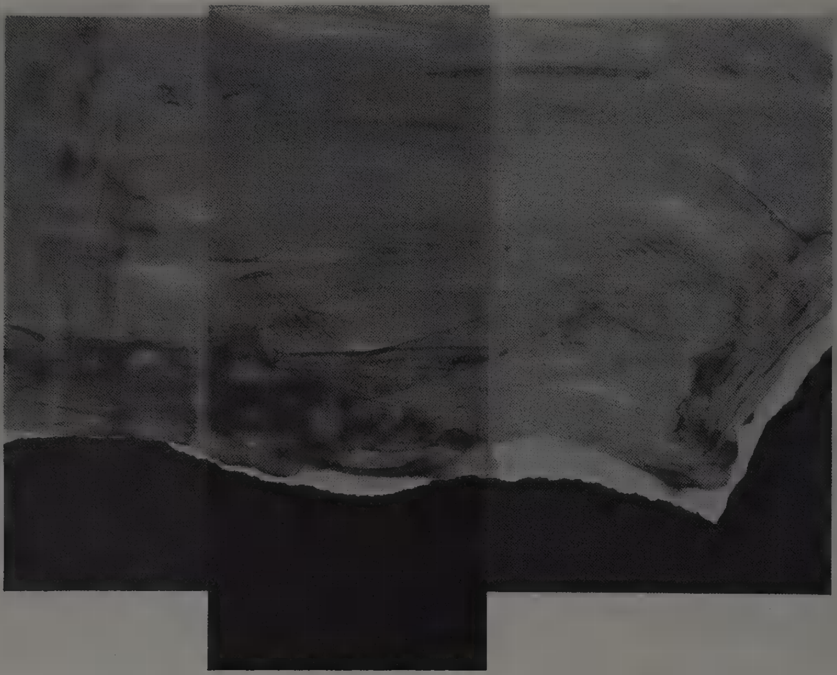


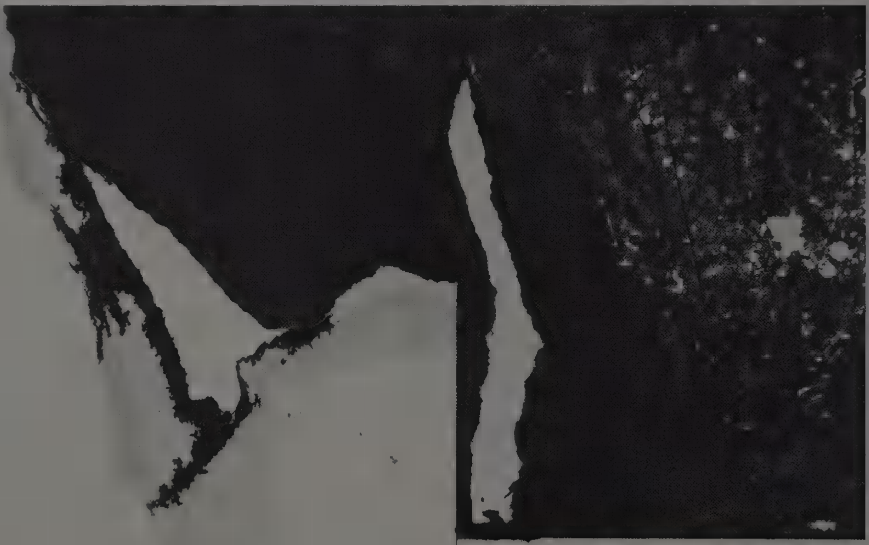


The three examples show the attempt to translate an aquarelle to tempera.



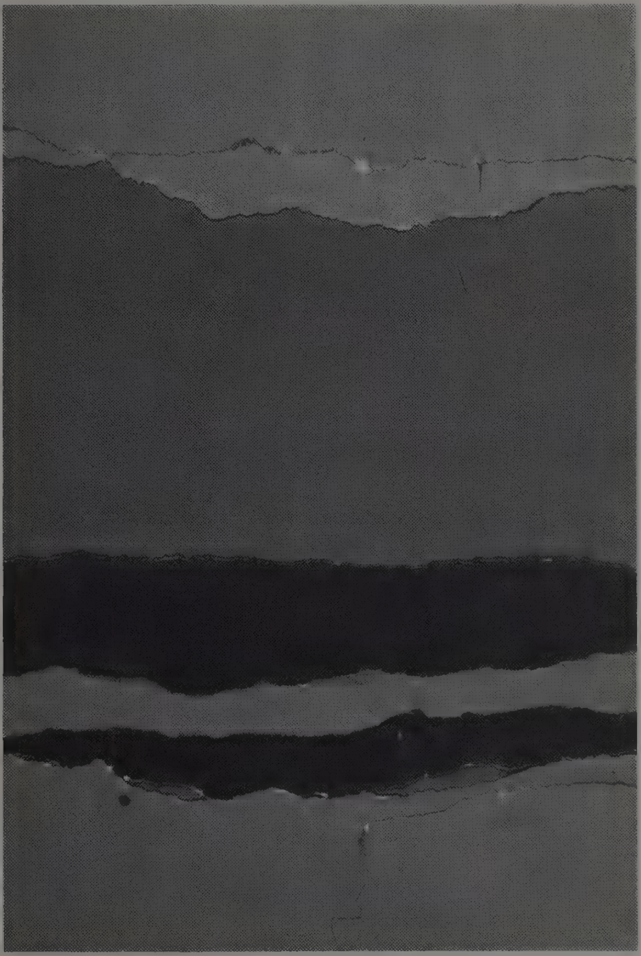
Collage differs from the preceding painting techniques in that predetermined form and color are applied simultaneously. The following exercises consist of controlled play with color and form from paper scraps. The paper can be rough, glossy, mat, transparent, colored, printed, painted, or patterned. Size and shapre are changed by cutting and tearing. Because of the diversity of the material surface the tactile quality is incorporated into the optical-contrast qualities of color and form. Creative possibilities are tested in individual exercises with different limitations and expanded by adding painting techniques (tempera, aquarelle, color pencils) to the collage.



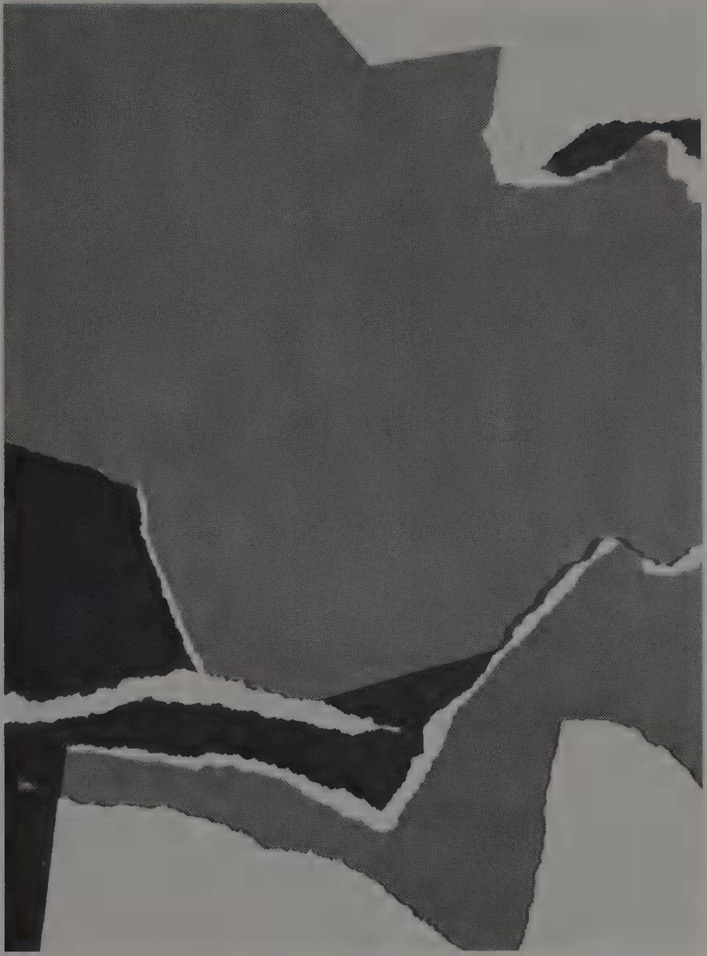


The surfaces of the two compositions contrast hard linear, cut angles with uneven, torn borders. The number of usable surfaces is limited. In the top example additional contrast is achieved with a transparent material.

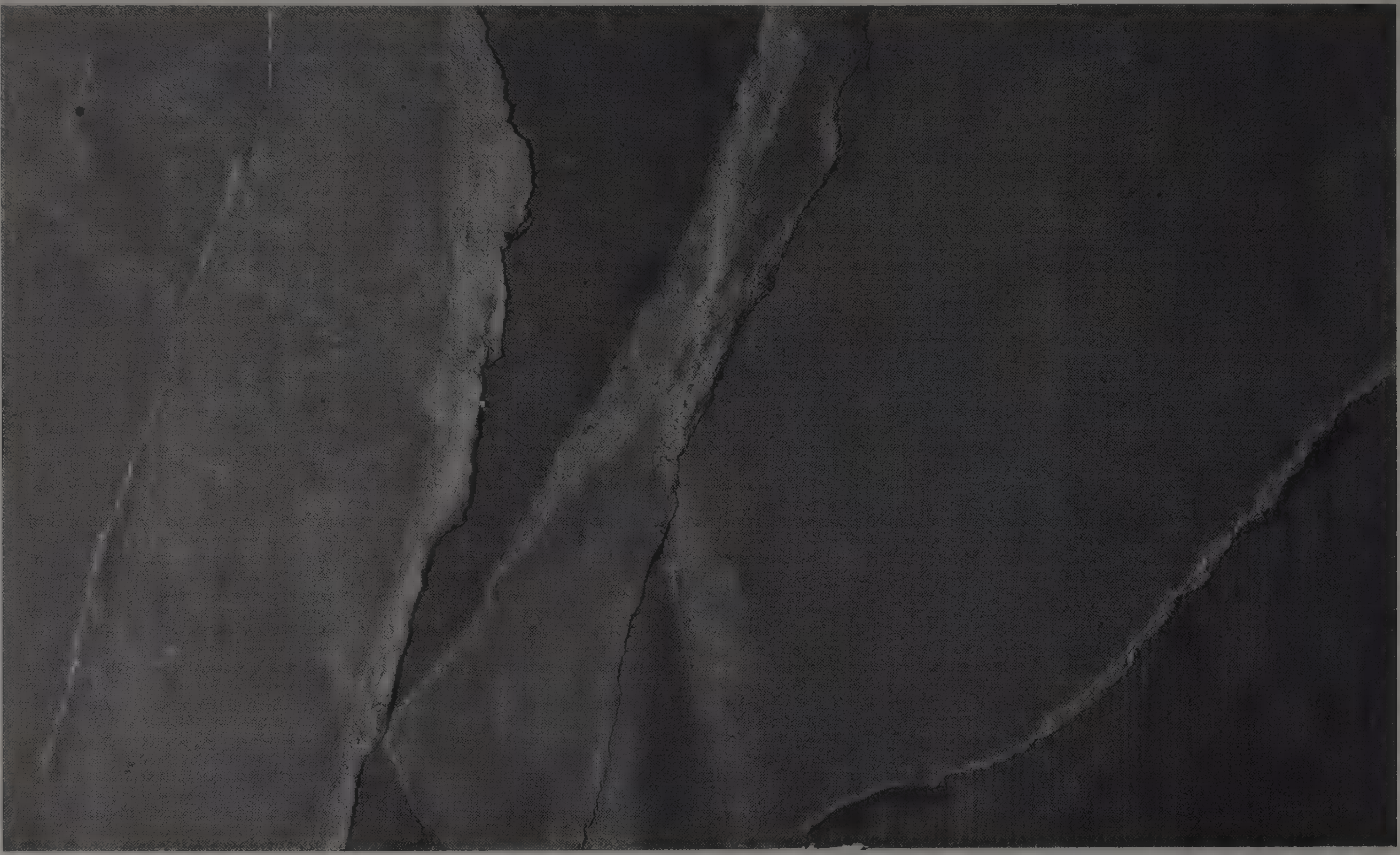
The photographs on the following pages show different phases of the working process. The size and format of the composition are established, and the appropriate mount is cut from a piece of white cardboard. Within this frame the different formal elements are shifted, turned, overlapped, and exchanged.



This horizontal composition consists of layers of the same material in different colors torn into different shapes.



In contrast to the previous example, this composition of surfaces is structured in layers of strong, active, torn contours. A new formal element, an irregular white line, is produced by tearing the painted surfaces.

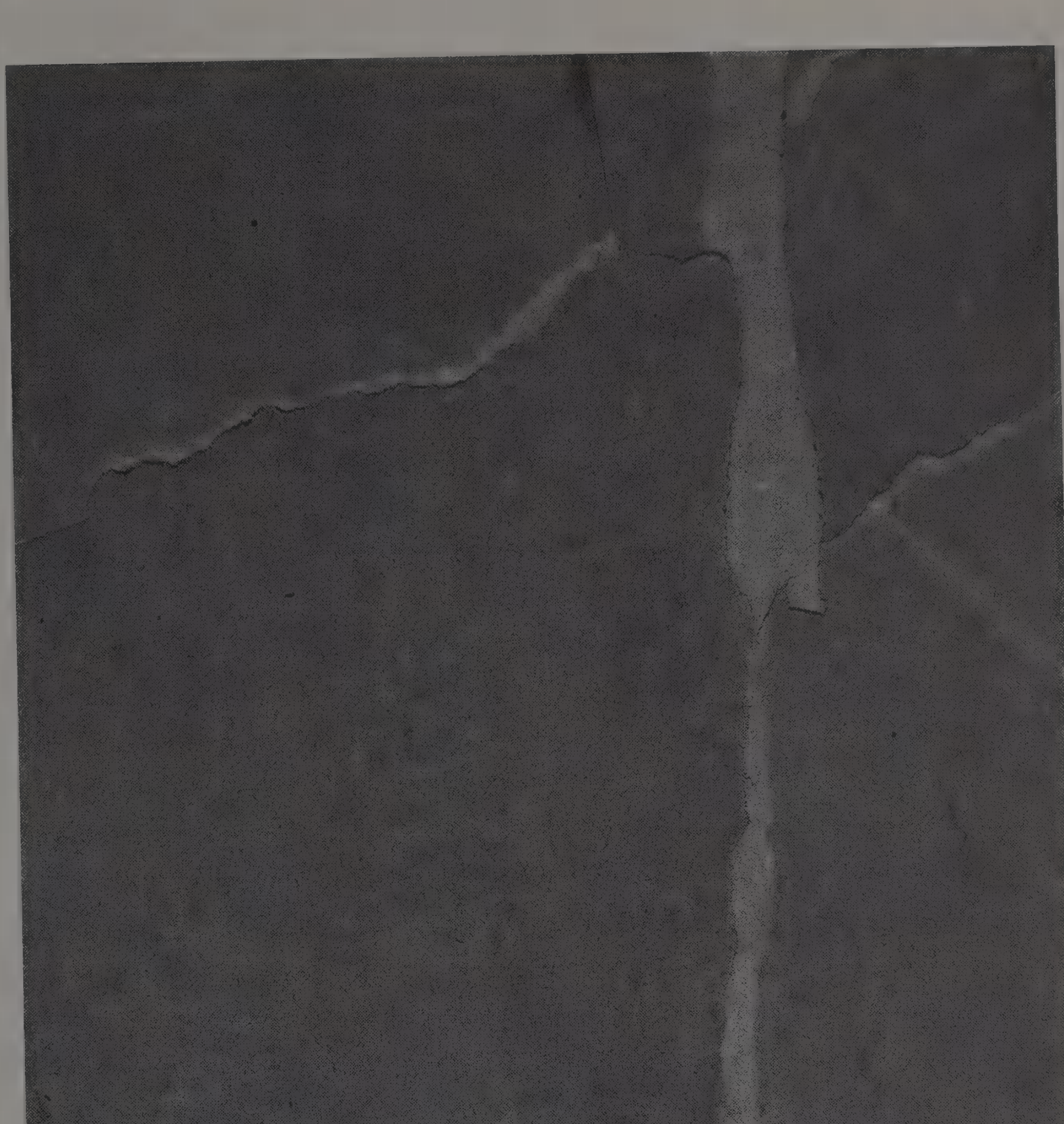


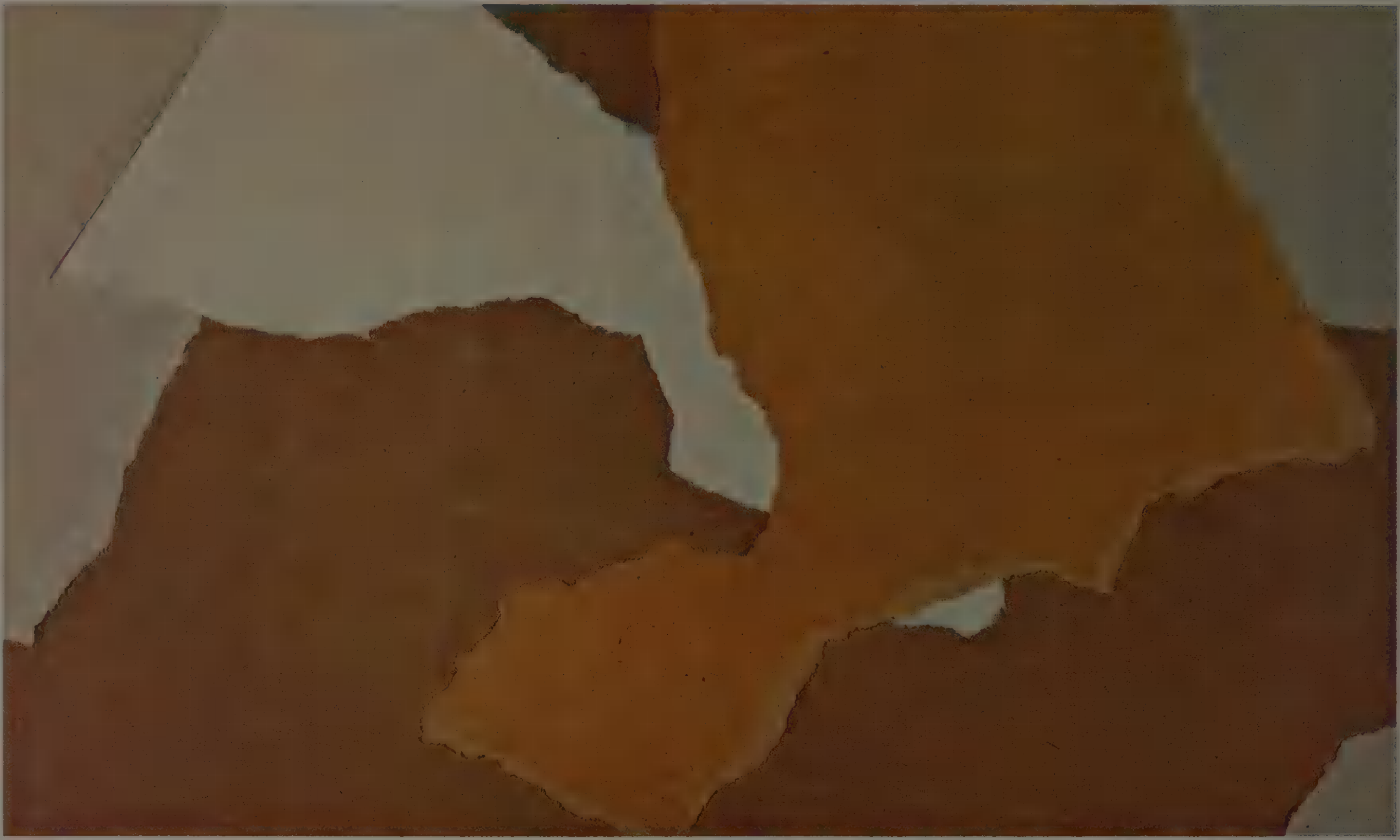
In the two examples on this double-page spread the material character of the paper rather than color or form is used as the creative means. They demonstrate one of many interrelated disciplines in this course and that on material studies, described in this volume.

The above example utilizes wrapping paper and minimal color differences. The effect of the different paper structures and of the typical character of the material is heightened by tearing the borders of the surfaces.

In the following example only one kind of paper is used. An insignificant color difference is produced by tearing the contours. The formal structure is recognizable through this border effect.

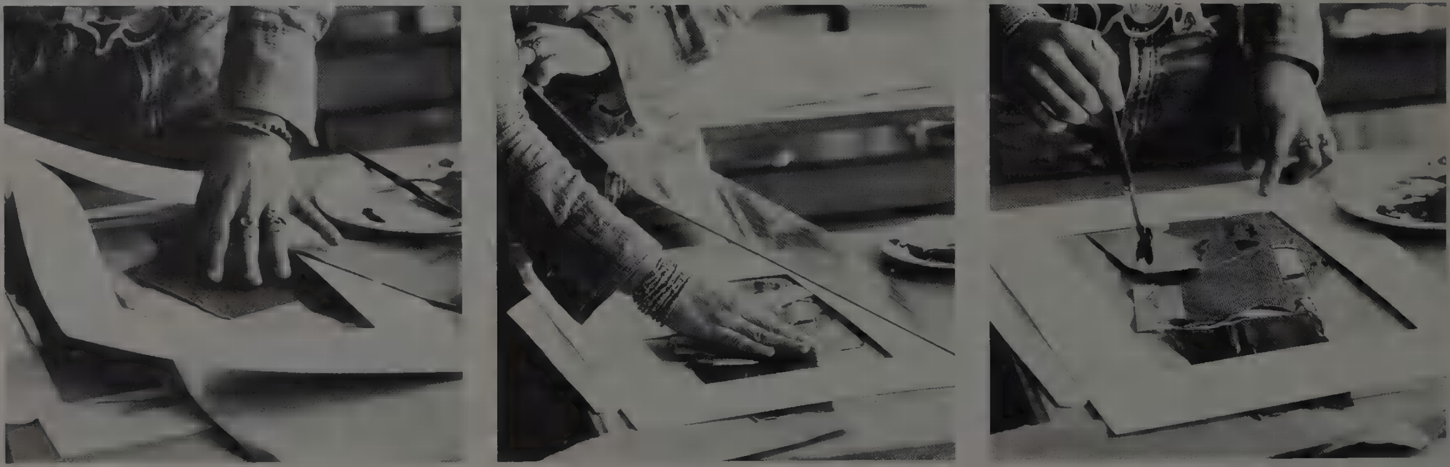
Below, the completed composition is carefully mounted, a skillful task, since individual pieces often overlap many times and should not be shifted from their designated positions.

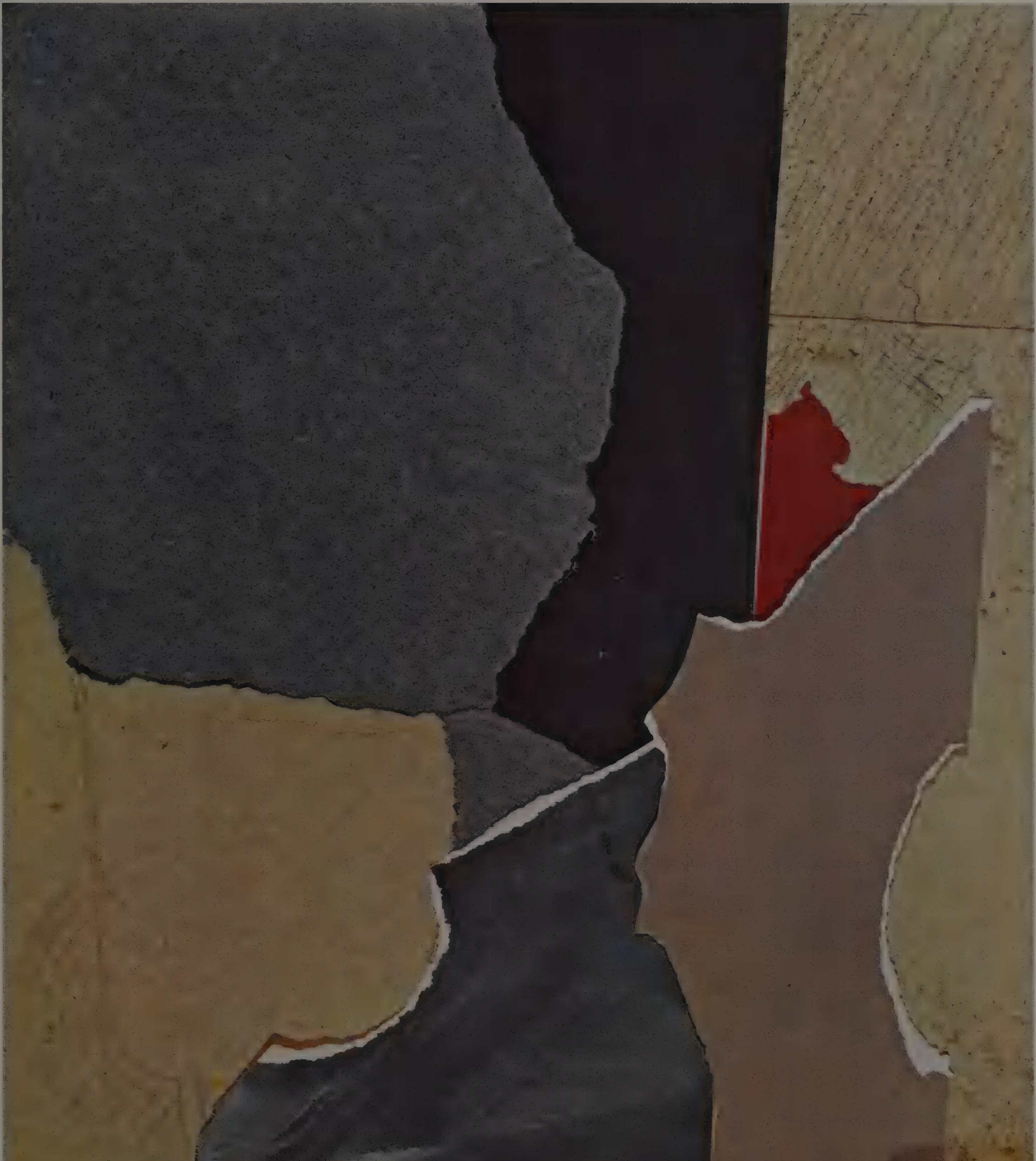




The two examples on this double-page spread show compositions reduced to a few elements: above, wrapping papers with different colors and structures; to the right, unpainted, painted, and textured papers with contrasted, torn, and cut surfaces and minimal color contrasts.

Below: weighted under a sheet of glass, the work can be observed without distracting, curling surfaces and shadows. Additional elements such as paints can be tested on the glass.



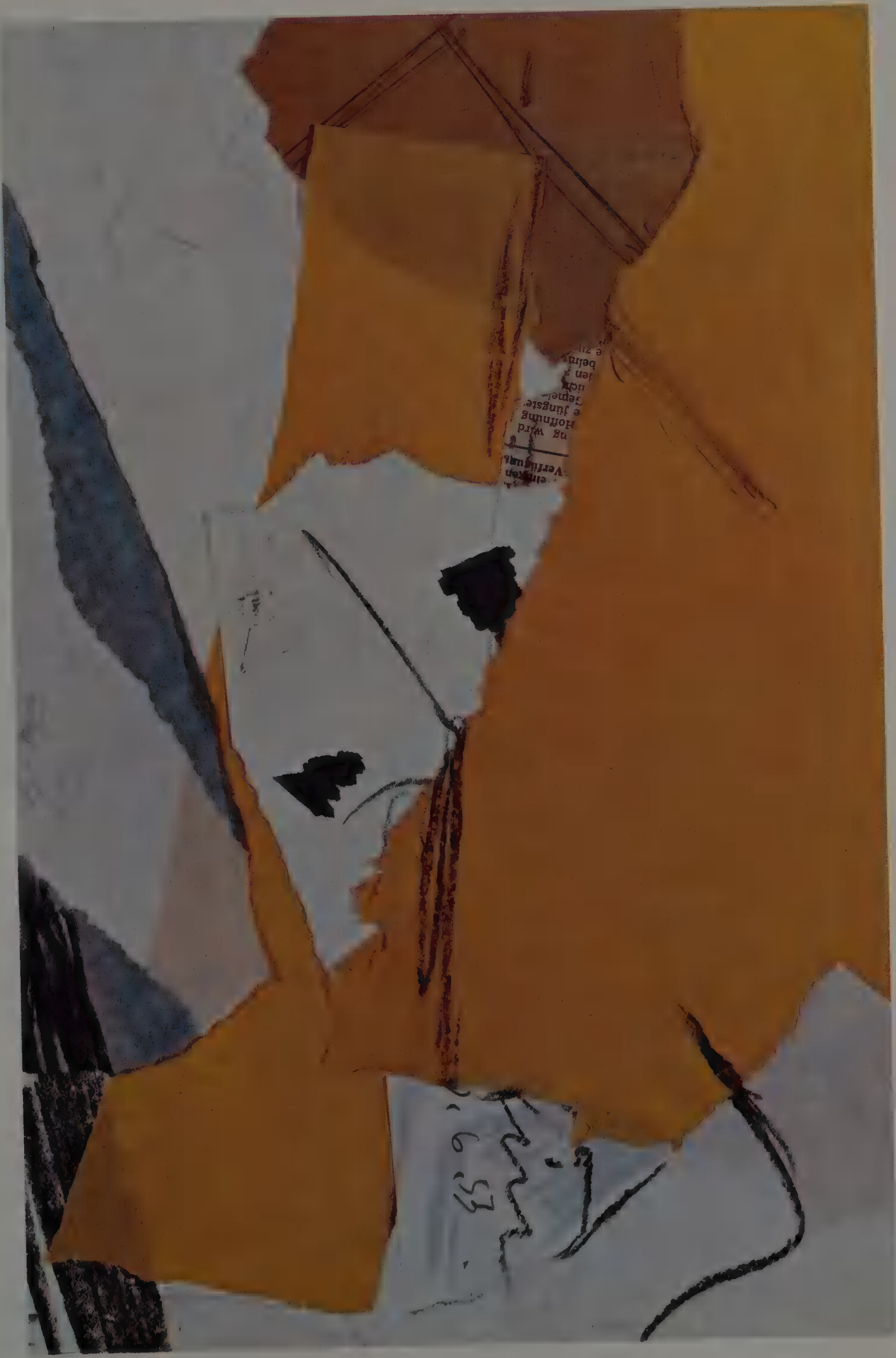


The two adjacent examples show compositions involving layering: above, transparent tissue paper; below, different qualities of paper.

The composition on the right includes different media: paper of different qualities, colors, and transparencies, fragments of newspaper, and handwriting. Parts of the composition are reworked with pencil and brushstrokes.

In the preceding exercises the painterly possibilities of collage are spontaneously translated into tempera and condensed into rhythmic compositions. The collages should not be rigidly copied, but their essential forms and colors reinterpreted. New size relationships create additional complications to the translation process.

The two following double-page spreads show the results of such translations. In the example on the last page many individual studies are worked into a single composition.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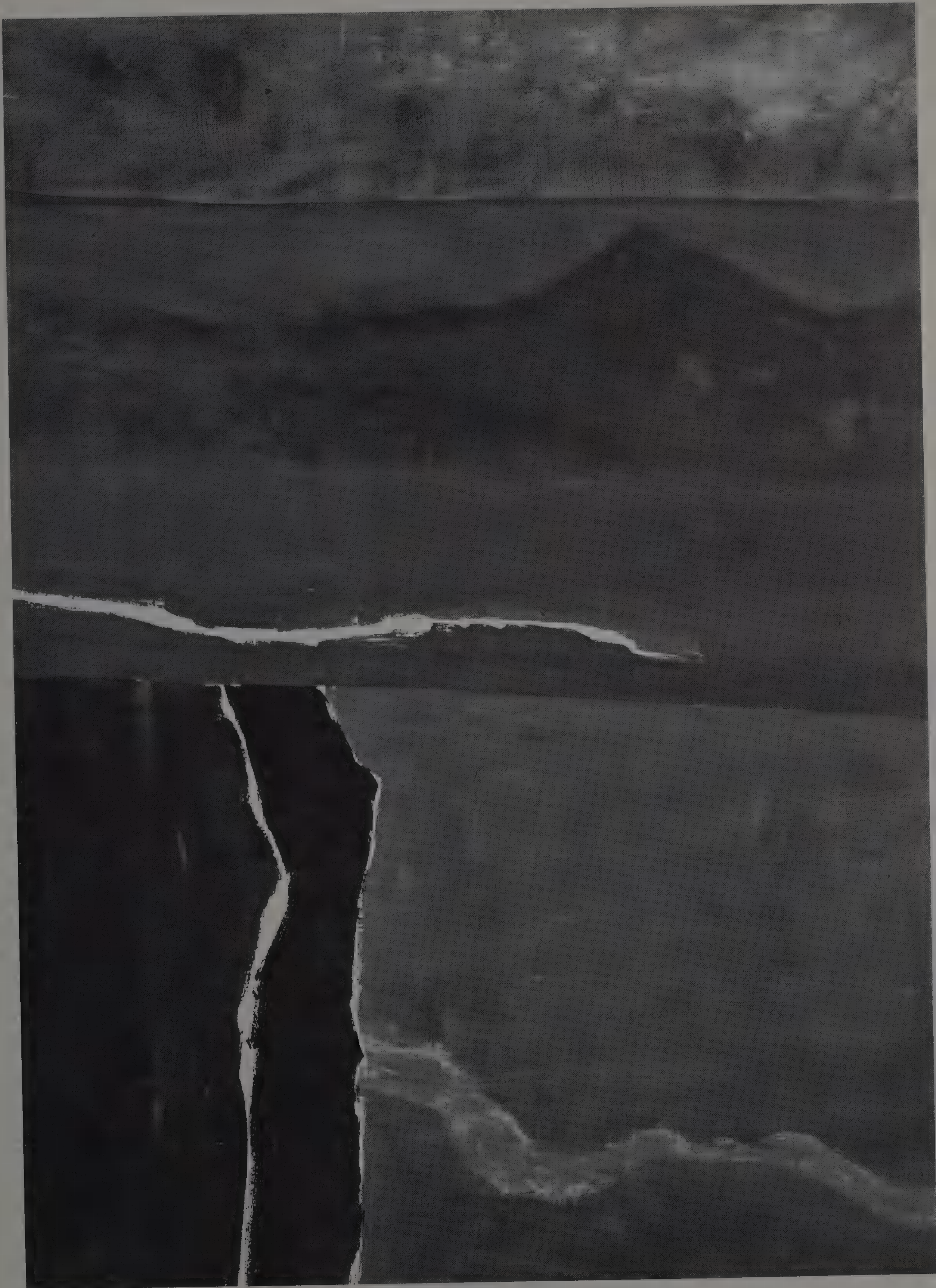

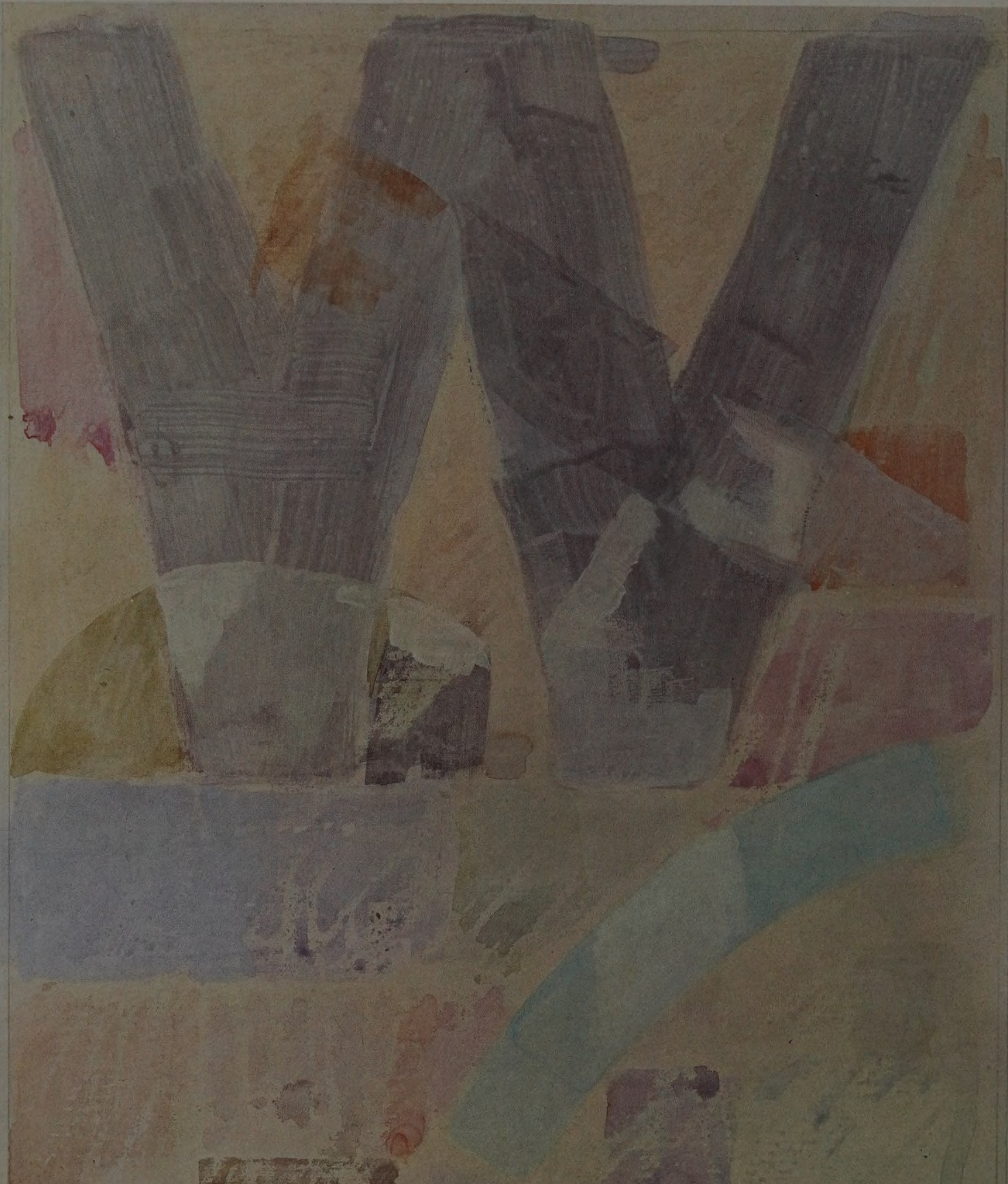

The Foundation Program at the School of Design in Basel, Switzerland is a fundamental education in art and design. It offers a number of interrelated, equally important courses. Subjects include drawing, color, three-dimensional studies, materials and tools, and exercises in form, aesthetics, and concepts, all of which are designed to promote optical and tactical sensitivity, formal perception, manual dexterity, and a clear understanding of creative processes and to clarify the students' individual talents. The program enables them to choose future professional training in graphic design, photography, typography, display design, goldsmithery, pottery, fine art, sculpture, and other related fields.

To be admitted into the program, students must be at least 15 years old, pass an entrance examination, and attend all the classes. The one-year program includes 42 classroom hours per week. All classes are conducted at the school and are limited to a maximum of 24 students.

Most of the faculty members are also professionals in their field, certified specialists who are active in visual, creative areas. Throughout the entire program, the teachers are available for individual or group consultation, which ensures that every student has an equal opportunity for a successful training. The teaching-learning process varies with each course. It can progress in several directions: linear, from simple to difficult principles; punctual, a collection of experiences derived from individual assignments; or complex, an analysis of variation sequences as an insight into the creative process.

The current standards of the program are outlined in this series, and the working procedure is explained clearly and understandably in chronological sequence. In order to clarify the interrelationships among the courses, they are categorized according to the teaching-learning process involved. The entire visual-creative program is presented in four volumes, each of which is a complete unit in itself and provides an introduction, course descriptions, and detailed illustrations.

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The Foundation Program at the School of Design
Basel, Switzerland

4

Basic Principles of Design

Van Nostrand/
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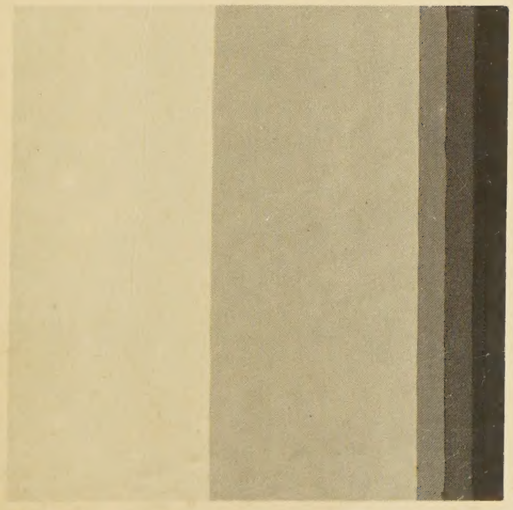
Volume
4

Color 1
Graphic Exercises
Dimensional Design



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Manfred Maier

The Foundation Program at the School of Design
Basel, Switzerland

Basic Principles of Design

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Volume 1	Object Drawing Object and Museum Drawing Nature Drawing
Volume 2	Memory Drawing Technical Drawing and Perspective Lettering
Volume 3	Material Studies Textile Design Color 2
Volume 4	Color 1 Graphic Exercises Dimensional Design

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General Introduction

Kurt Hauert,
Head of the Foundation Program

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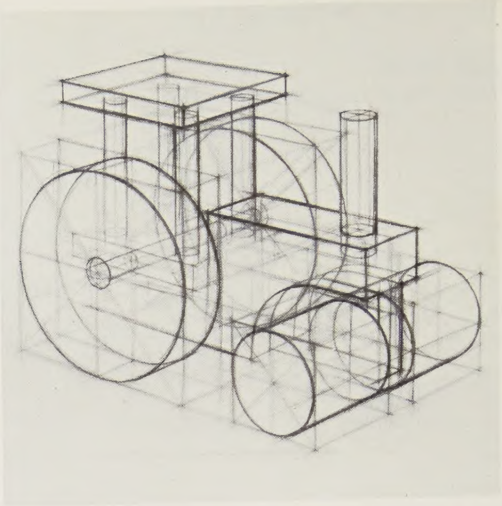
The Foundation Program is based on an objective, developmental educational system over the past thirty years. It disregards fashionable vogues but allows enough freedom to integrate necessary innovations. It offers a model for all teachers, students, and administrators who are interested in a critical, investigatory approach.

In conclusion special thanks are expressed to those who devoted their time and energy to the realization of this work.



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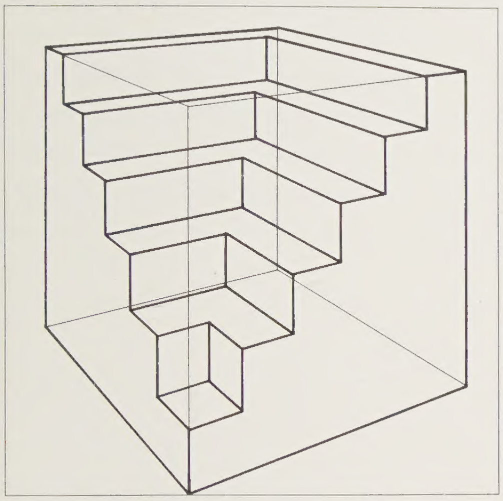

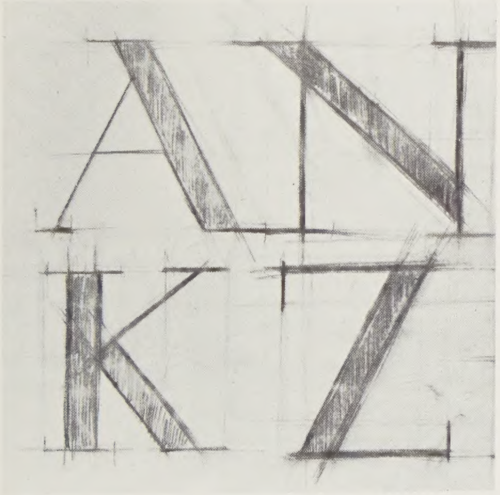

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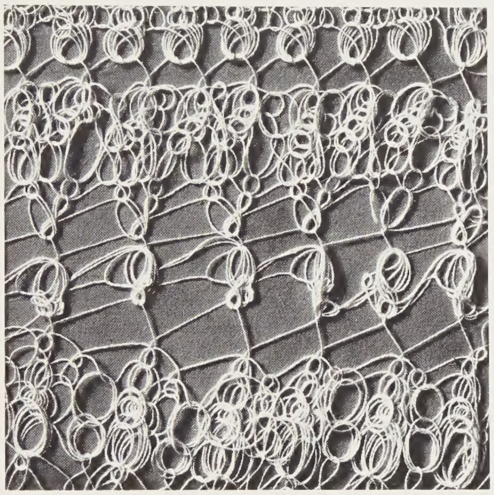

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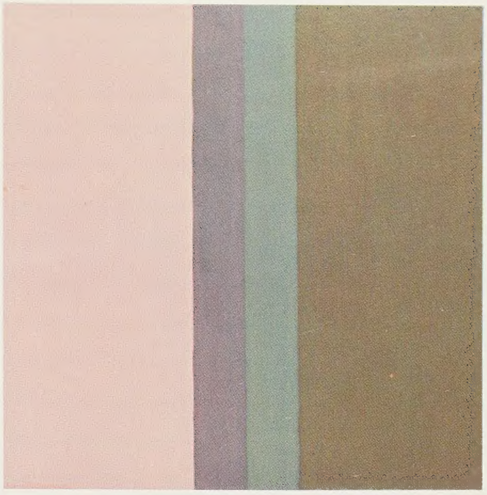

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Number of faculty in the Foundation Program	26
Number of students in the Foundation Program in six parallel classes	130 ca.

Directorship:

until 1970 Emil Ruder
since 1971 Niklaus Morgenthaler
Head of the Foundation Program:
since 1971 Kurt Hauert

Faculty of the Foundation Program

Beck, A.	Economics
Biesele, I.	Graphic Design
Bollin, M.	Sculpture
Bürgin, G.	Decoration
Burla, J.	Sculpture
Eya, L.	Architecture
Gautschi, R.	Painting
Grossenbacher, M.	Sculpture
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Color 1
Graphic Exercises
Dimensional Design

Techniques and media have developed in a superficial, one-sided fashion because of the free-enterprise system. Creative abilities and possibilities are bound to production- and consumption-oriented goals due to continuing specialization. The existing visual chaos necessitates working abundant creative possibilities of media and techniques. The application and consequences of these possibilities on the environment introduce the future designer to complex problems. He will be confronted with new and unknown assignments, techniques, applications, and social attitudes. He must survey many complex aspects outside the design itself and be able to integrate them into his work. This requires the ability to continually question existing structures and functions.

In the three courses described in this volume complex design concepts and interrelationships are investigated and developed through elementary exercises. Structure models, series, programs, and concepts give the student insight into and perspective on a versatile creative process. Continual differentiation, definition of criteria, comparison, evaluation, objective criticism, and control of one's work develop an independent judgment and a sense of responsibility. The subjective abilities of the students expand the differentiation process and form a foundation for group experience. The abundance of possible but very different solutions is not foreseeable or achievable by the individual.

Knowledge and experience clarify the necessity and consequences of creative judgments and the inherent positive and negative effects of many factors, which can be transferred to other media and to complex problem solving.

Color 1

The students' knowledge of color is limited through untested preconceptions and recipes during their previous education. Color is regarded as an expression of personal taste.

Objective, differentiated knowledge of the appearances, interrelationships, and working criteria of color is the goal of this course. Objectivity is achieved through the observation of color relationships under changing conditions and not through color theory. Within clearly defined limitations interrelations are defined and organized. Perception and experience, a prerequisite for the creative use of color, are developed through continuous comparison and analysis of color qualities and quantities.

The appearance of a color cannot be studied in isolation: it must be seen in relation to other colors. A color exhibits inherent, relative, and changeable qualities due to differences in hue, value, brightness, and its proportion to other colors. A thorough investigation of these relationships (contrasts) is the starting point for this process; the exercises test the appearance of color relationships in complex structures.

In order not to confuse the appearance of color with compositional characteristics, simple forms are chosen: a square format (9 × 9 cm) is subdivided vertically. Formal variation lies in the number and width of the vertical intervals and is more quantitative than qualitative.

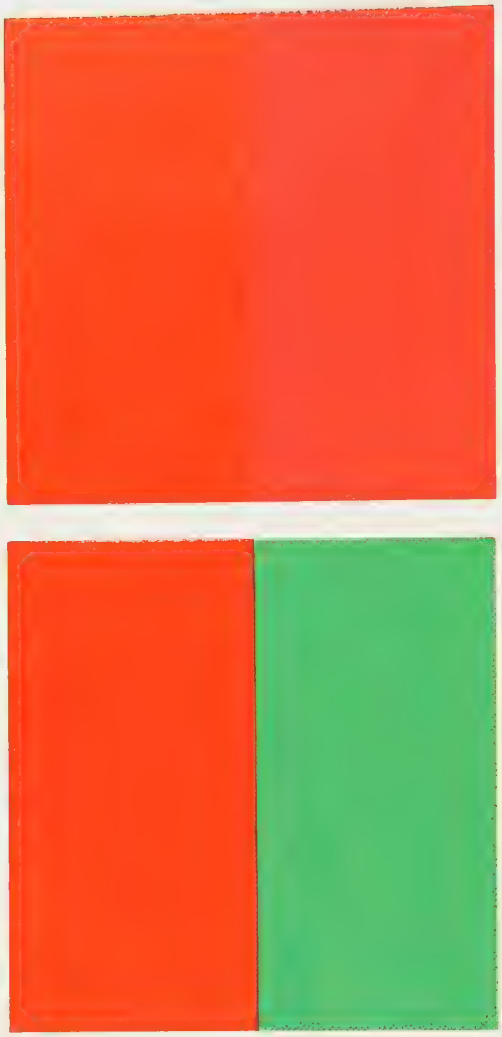
Students learn how to mix and apply tempera directly on stretched paper. Uniform, even color application is essential to the study of pure values: brush textures and transparent layers change the appearance of the colors.

In addition to practical involvement color theory is explained in a series of lectures.

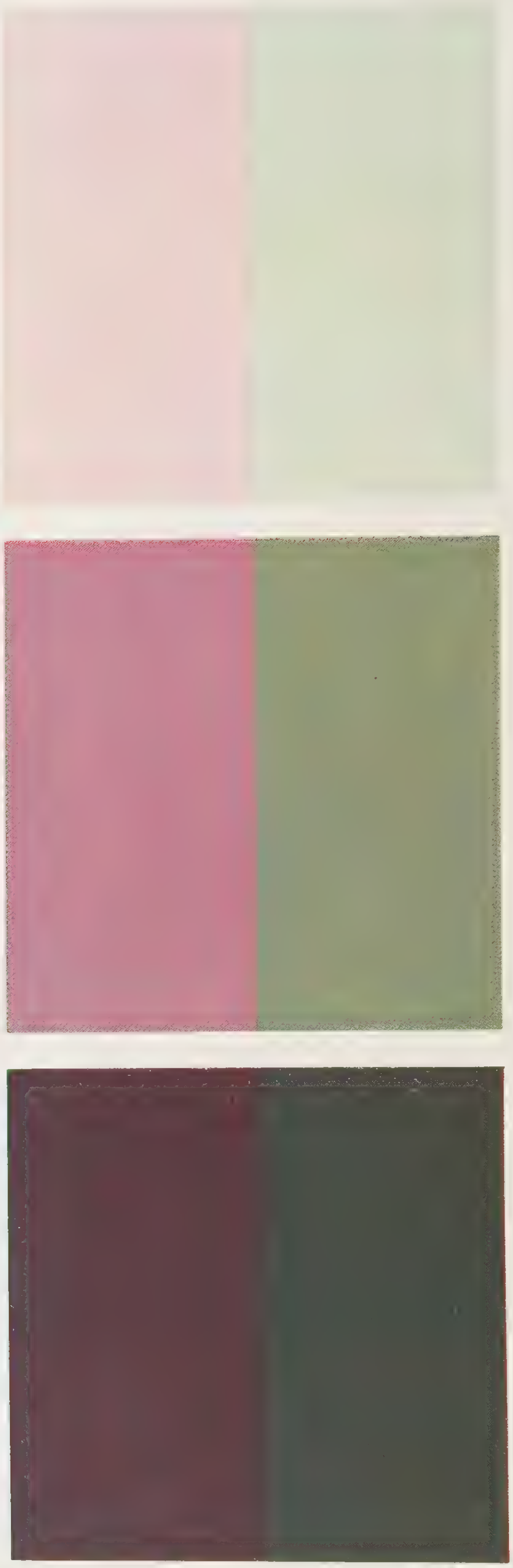
The refinement of color recognition is the goal of this exercise. This is accomplished by defining the criteria in the working process. A square divided in half serves as the format. Two opposing colors are placed next to each other and the most different contrast should be found. Each student paints approximately 30 to 40 squares and cuts them out. Using these examples as a basis, the characteristics of different colors are discussed with the students. Most students agree on some color contrasts (i.e., light-dark) while other pairs are judged more subjectively (i.e., warm-cold). Three color qualities—hue, value, and brightness—allow a precise description of the reciprocal relationships between two colors, and are used to analyze the painted examples. Other subjective criteria are not considered in this exercise.

The color wheel is studied to explain the hue contrast of colors. A graduated row of grays progressing from white to black is the model for value contrast. A color model is explained in which the three criteria are visible in three-dimensional form.

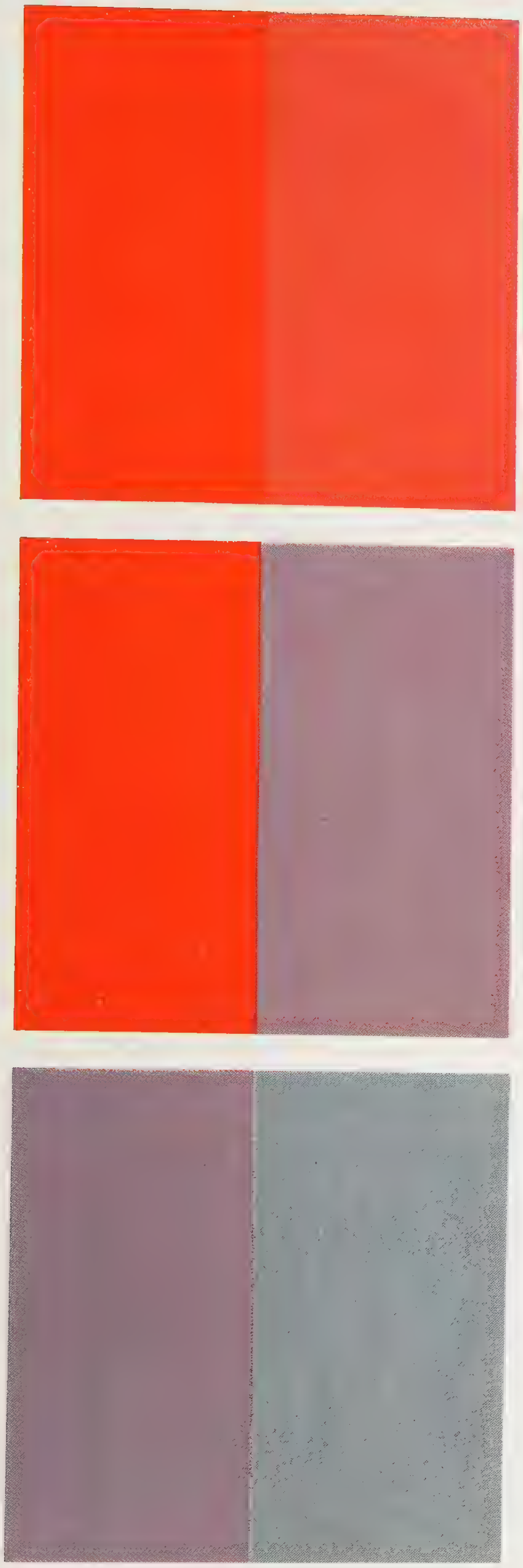
The student analyzes his exercises and asks the following questions about each color pair: in comparison to the color wheel is there a difference of hue, or is one of the colors more red, yellow, or blue than the other; is one of the colors brighter than the other? Different pairs are thus found to have corresponding characteristics. In doubtful cases the teacher suggests choices and comparisons. In organizing the color squares it is obvious that different degrees of clarity are present in individual groups. Missing areas are filled and unclear examples eliminated or corrected until a few clear examples are present from each contrast possibility. The examples are arranged in groups and glued on white cardboard. The examples here and on the following two pages show color pairs arranged according to the analyzed criteria.



The above example shows minimal difference in hue: the left-hand color is slightly yellower than the right. Value and brightness are the same for each. The example below exhibits strong hue contrast between red and green. Value and brightness are the same.

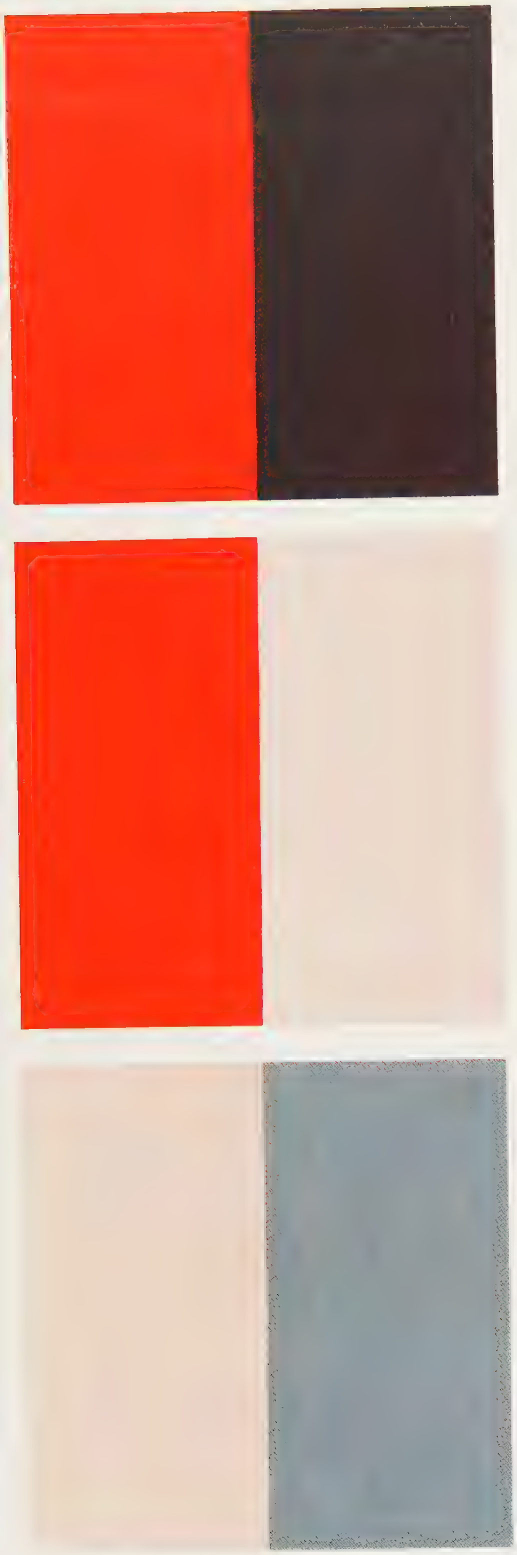


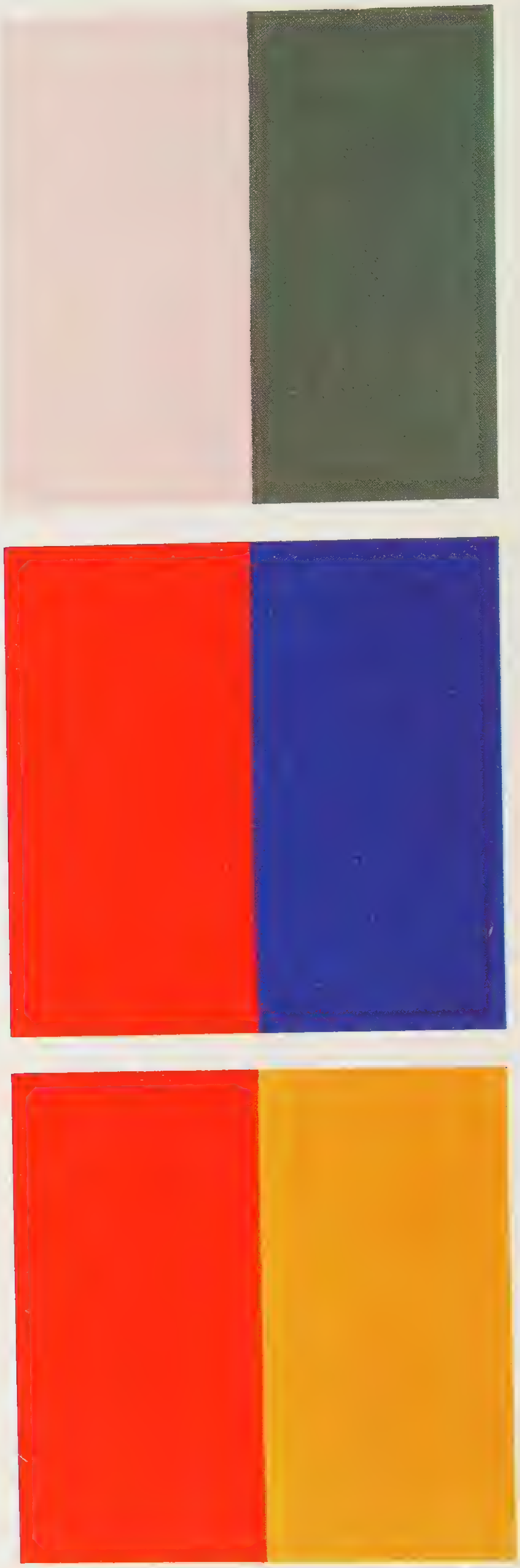
The three color pairs show the contrast of hue between red-green on various brightness levels.



The three color pairs show differences in brightness. The same reddish-gray color is duller in the center example; below, in relation to another color, it is brighter. Hue and value are the same.

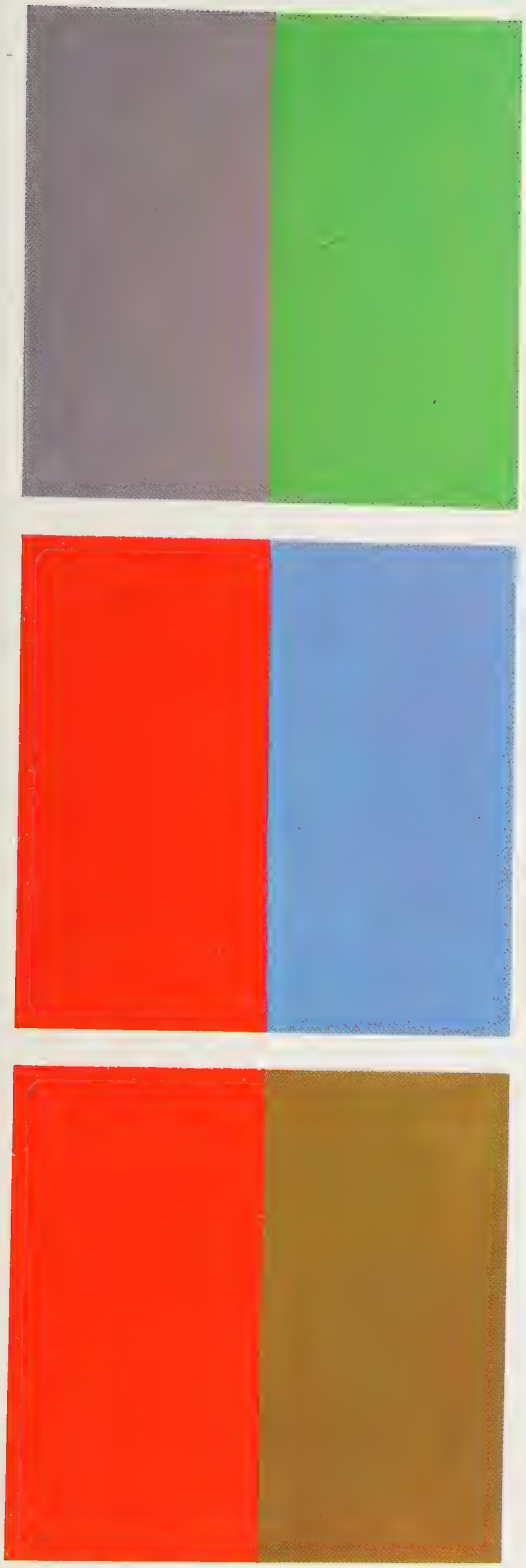
The three color pairs show differences in value. The darker top example becomes lighter in the center in relation to the neighboring color. The pink and brown in the bottom example are derived from the same red.



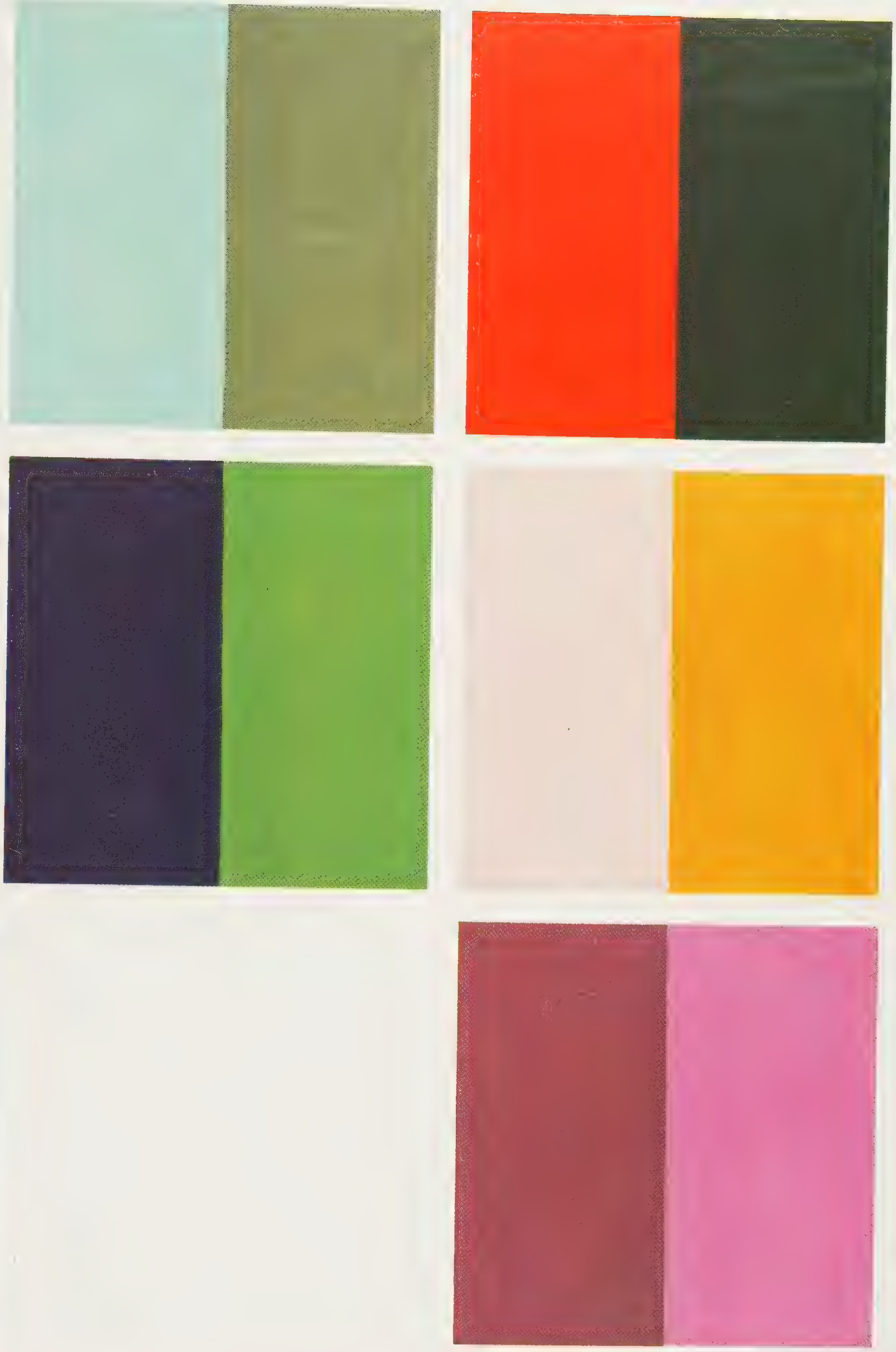


The three color pairs exhibit differences in value and in brightness. The dark brown and light pink are derived from the neighboring red by mixing black and white, respectively, and thus are the same in hue.

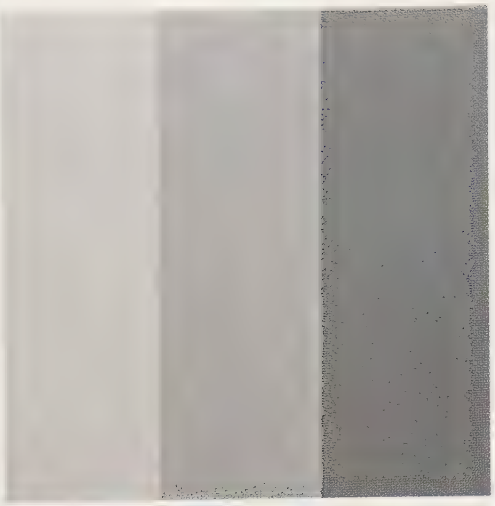
The three color pairs show differences in hue and value but not in brightness.

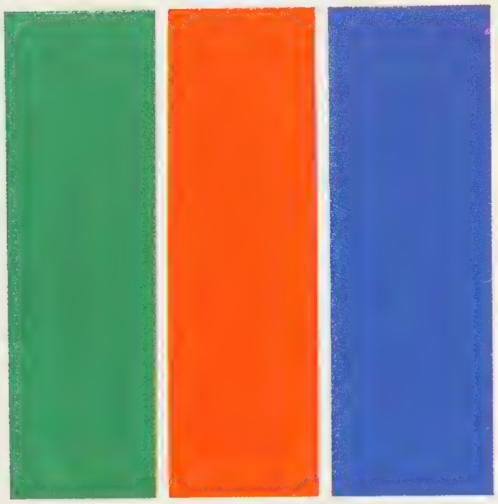


The three color pairs show differences in hue and brightness but not in value.

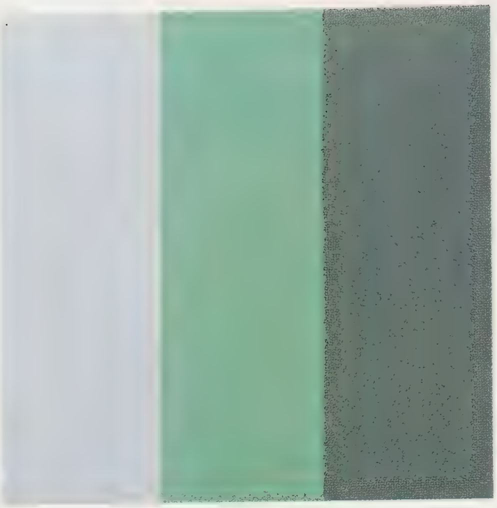


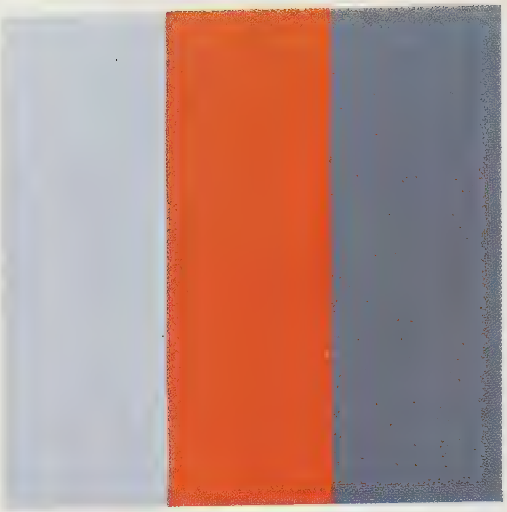
The five color pairs above and right simultaneously exhibit differences in hue, value, and brightness.

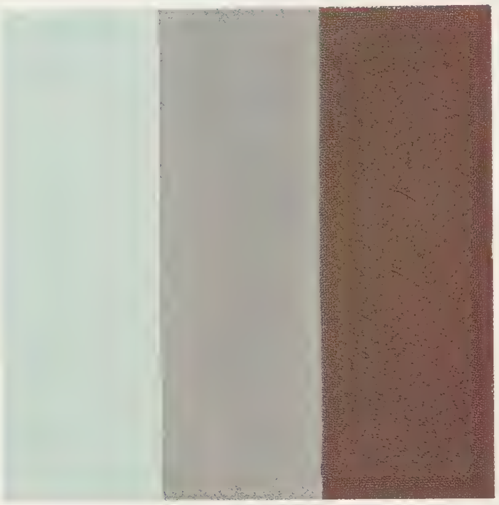


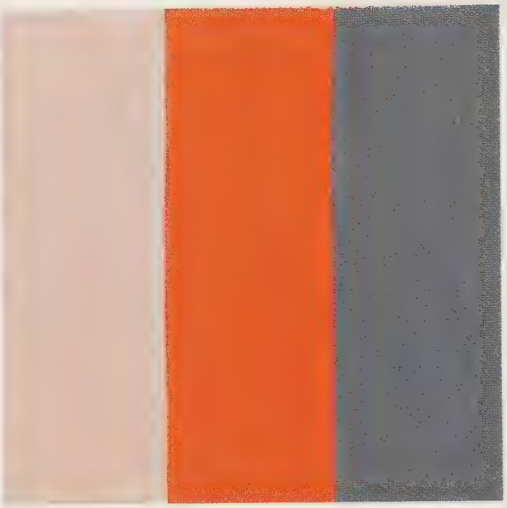


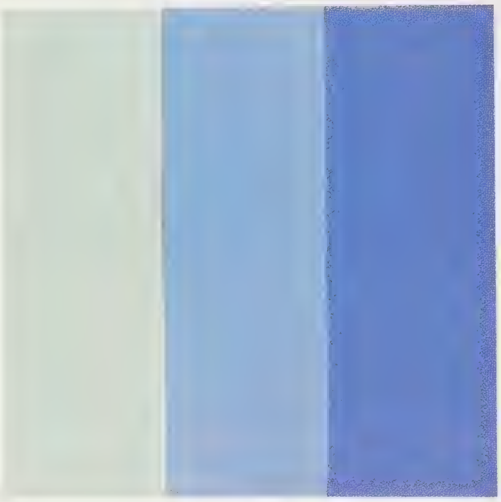
Above is a simple, even value gradation, which is maintained in the following examples and forms the ground structure for strong color and brightness contrasts; below are the three selected pure colors, all the nuances are obtained by mixing them with black and/or white.

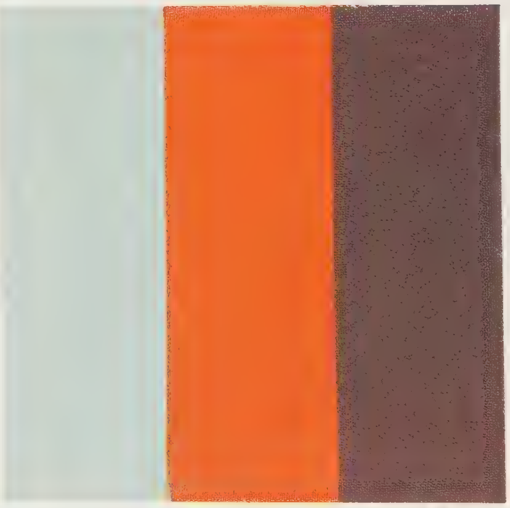




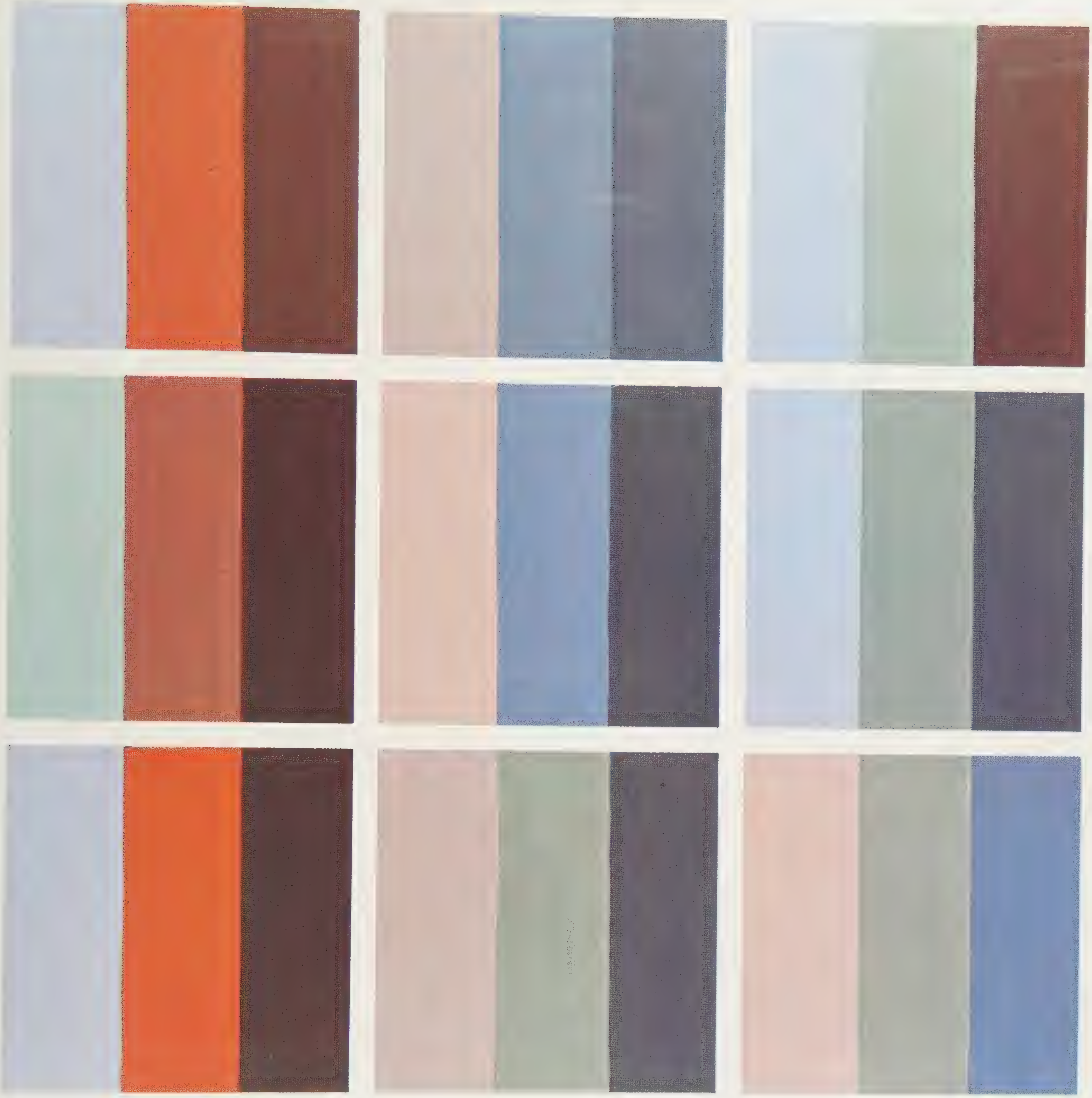


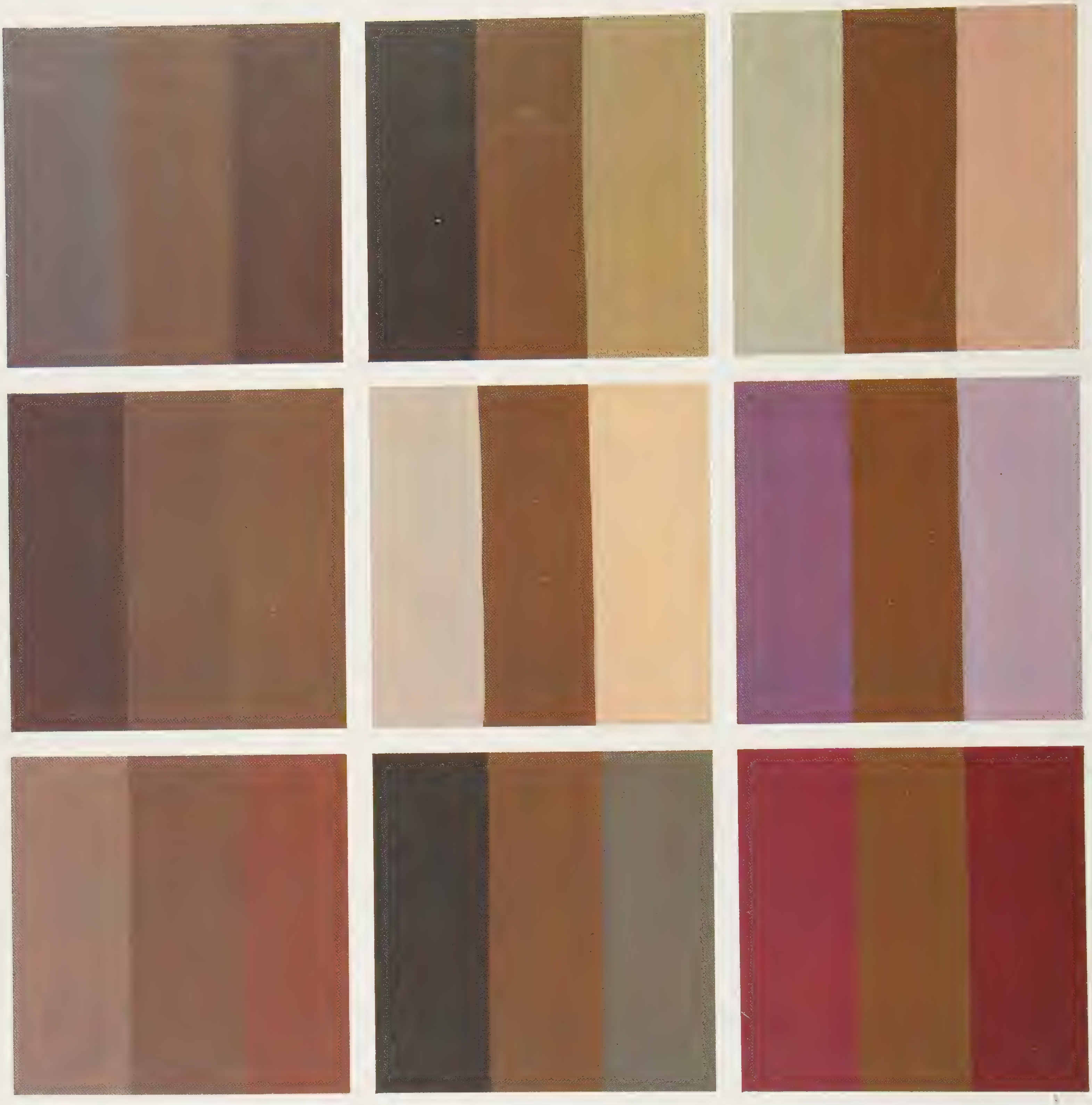






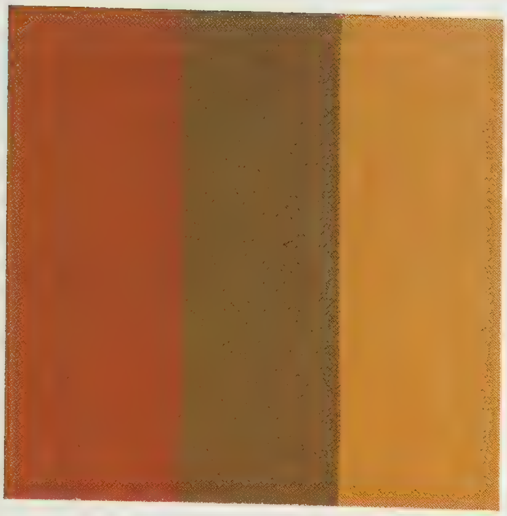
The format for this exercise consists of a square divided into three equal parts. Three values are chosen as constant elements for each section. Mixing is limited to three pure colors, black, and white. They are not mixed with each other but separately with black and and/or white. Within the constant value many different but interrelated color harmonies are investigated. The situation becomes more complex if the value relationships are less regular, if the three stripes are uneven in size, or if the number of colors is unlimited.

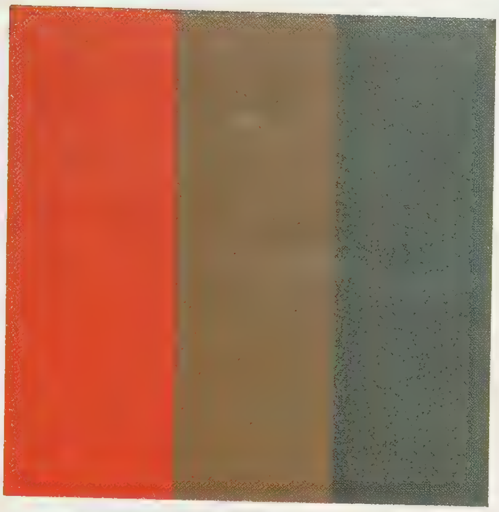


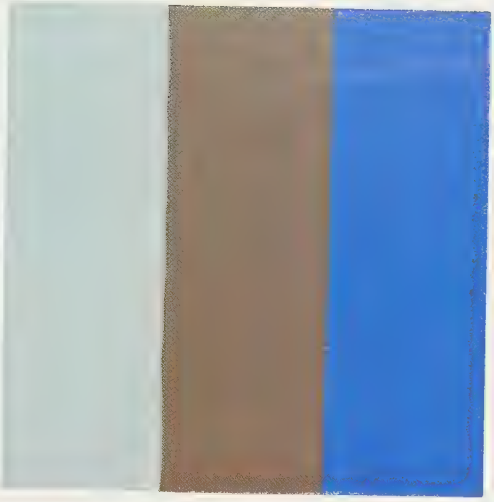


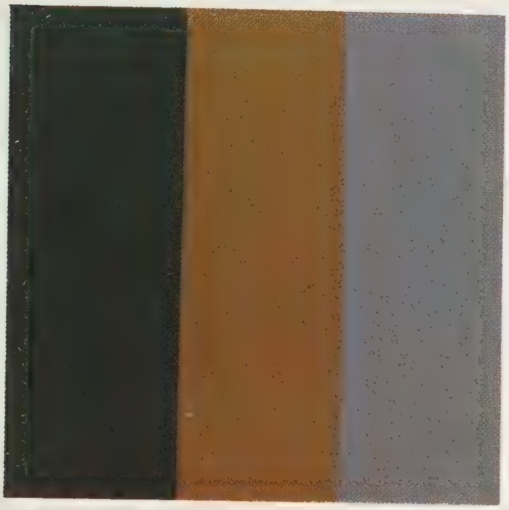
The same format is retained in this exercise. A constant color should be brought into a relationship. The color contrasts analyzed in the first exercises are consciously applied, and interest is created through the contrasting, similar or identical characteristics. Many possible combinations are to be discovered. The student assembles his collection (about 40 to 60) cutout color squares and organizes them according to color tendencies. Groups are arranged from harmonies that are equal in the kind and strength of color contrastes. The examples can be compared only as totalities (syntheses): detailed analysis of the individual relationships among the three colors is too complex and not useful. All the squares must be included in the organization without considering spontaneous judgments such as like or dislike. The resulting groups are brought into a meaningful relationship and glued on large sheets of cardboard.
Discovery and application of characteristics, constant comparison, and judgment of similarities and dissimilarities among individual color harmonies promote conscious awareness of color relationships. The students experience the simultaneous alteration of the constant color through the influence of adjacent colors.

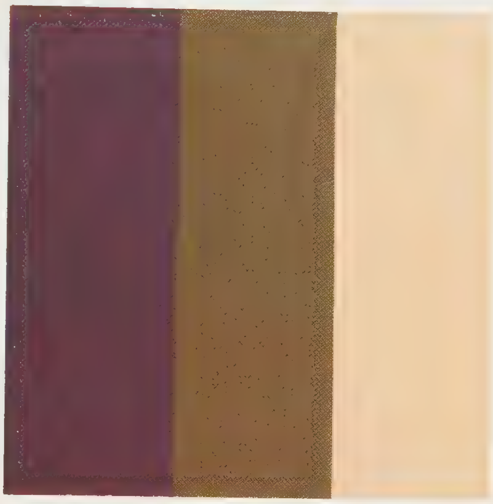
These examples are taken from a larger grouping. Groups with similarly strong contrast are positioned vertically underneath one another. The group on the extreme left exhibits only minimal difference in hue, value, and brightness; on the extreme right the differences are very large. The other examples fall between these extremes.

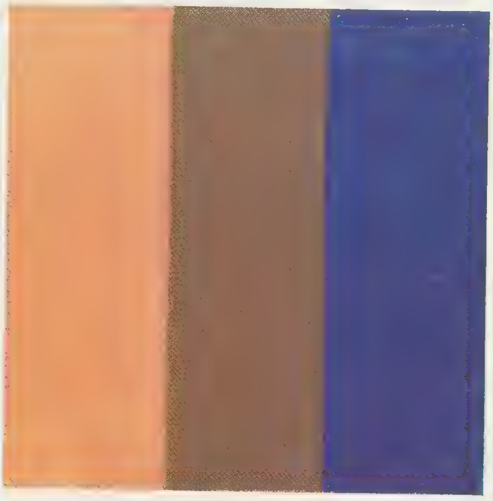


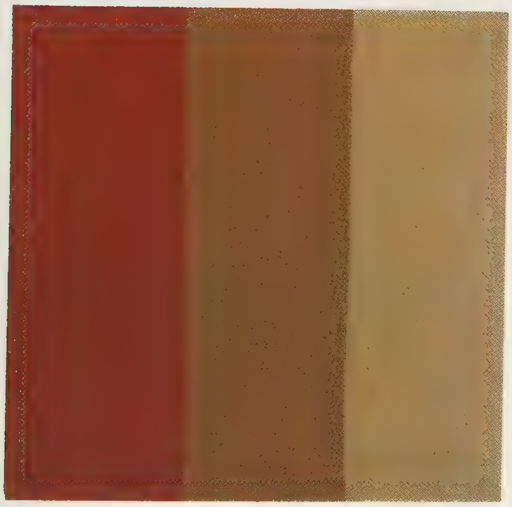


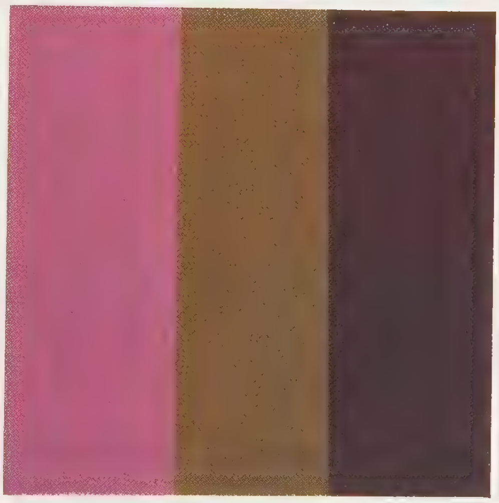


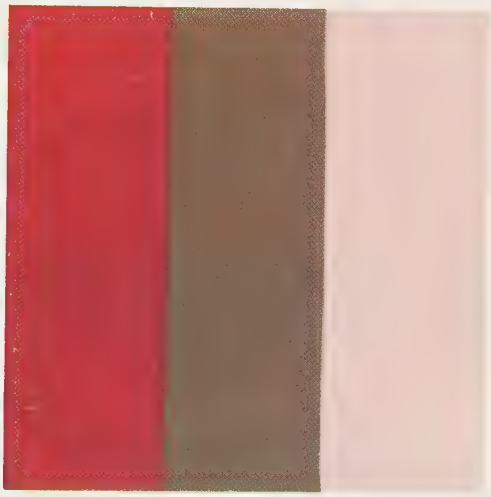


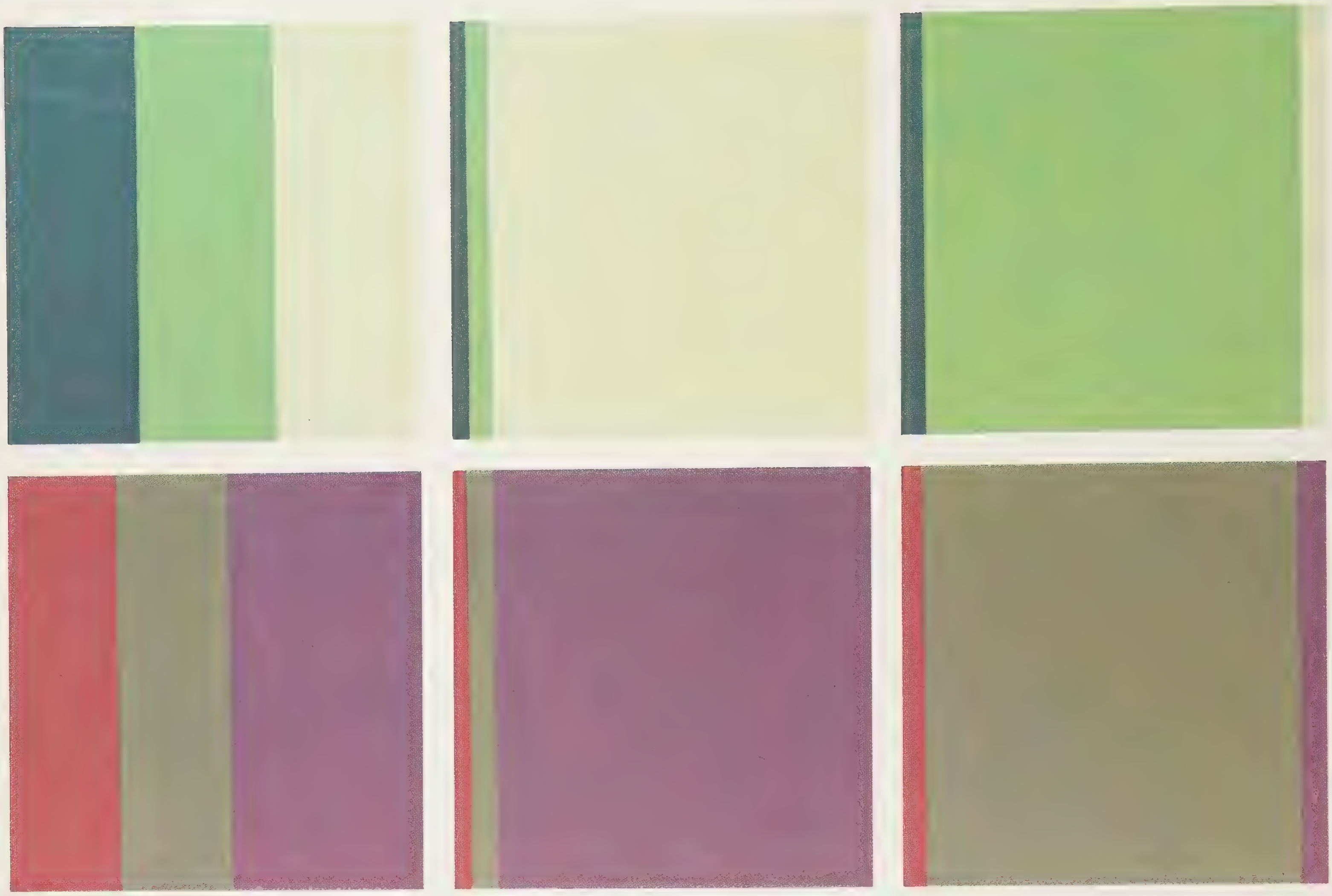








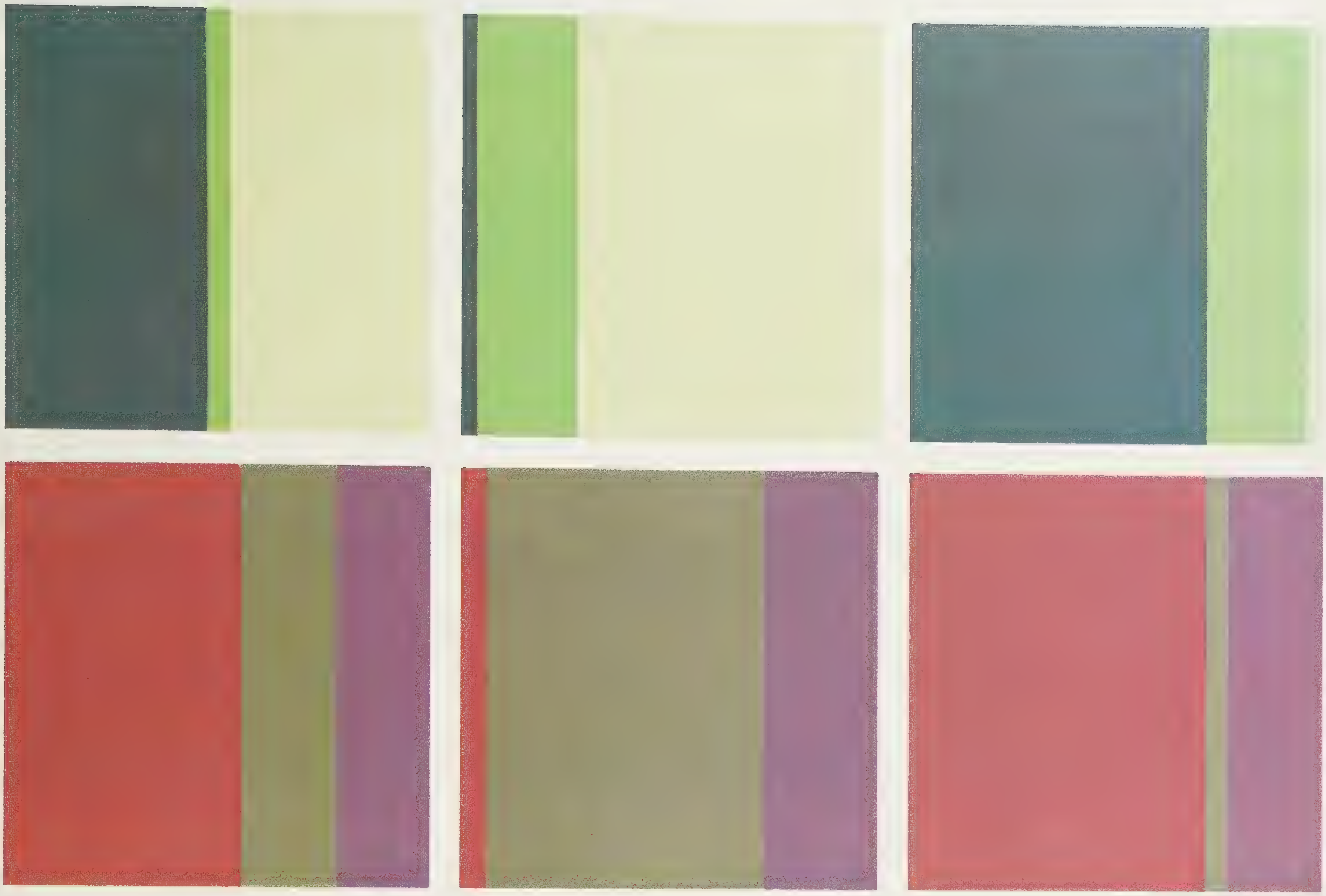




From the previous exercises an interrelated color pair is selected. The three colors are remixed in large quantities and stored in jars. The original harmony changes with rearrangements of the sequence and variations of proportions. In some cases the color harmony is emphasized or refined; in others it is unfavorably affected. It is obvious that the positions and proportions of the colors are influenced by their reciprocal relationships.

In the two harmonies in the above examples, the proportions and not the sequence of the colors are varied.

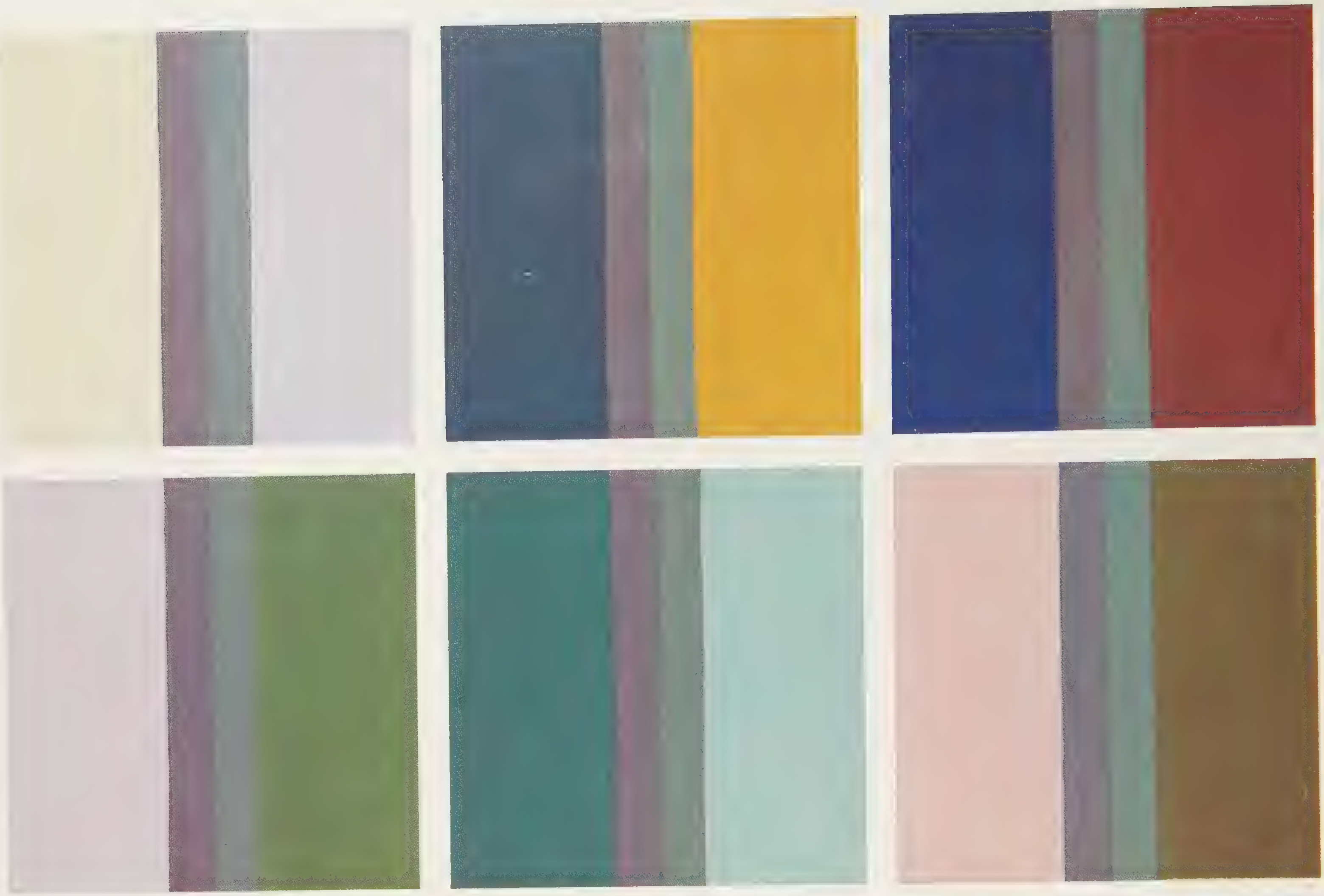
The photograph shows the necessary materials for the color exercises: the assorted tempera colors, two or three brushes, a container for water, paper, a flat dish for mixing, and a board for stretching the paper.



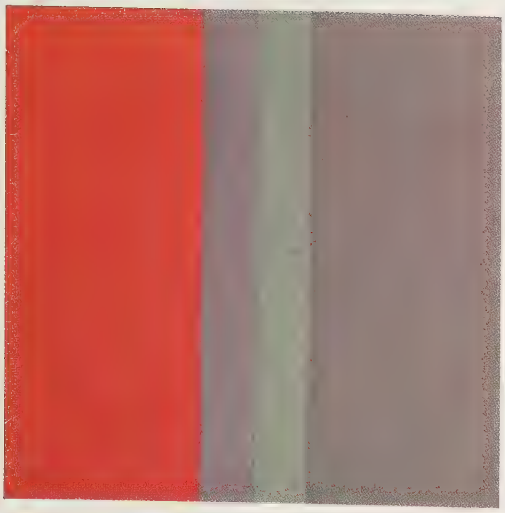
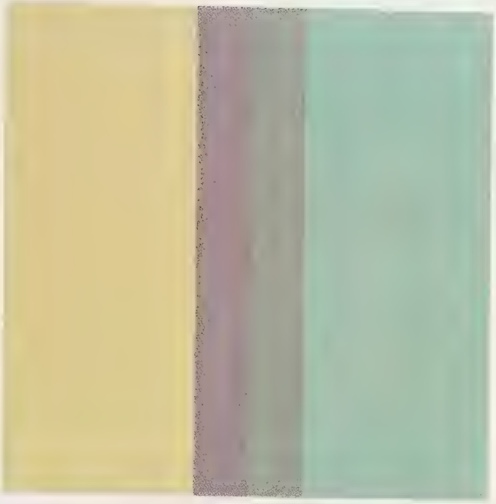
The following photographs show how to stretch the painting surface.
The paper is moistened on both sides with a sponge so that it expands.

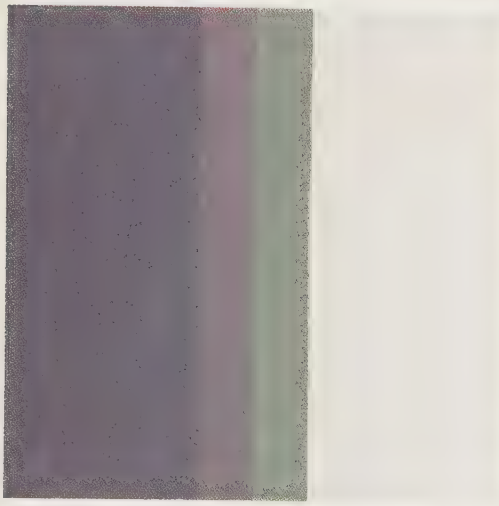
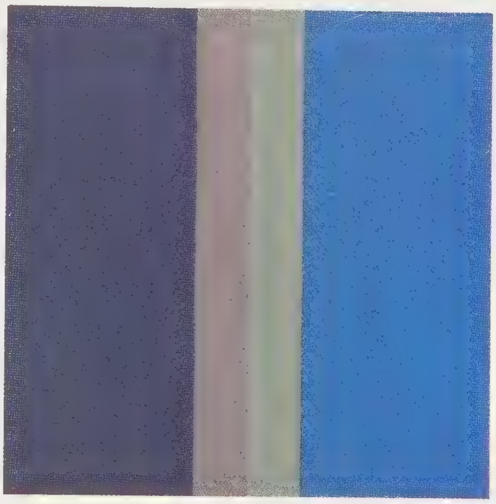
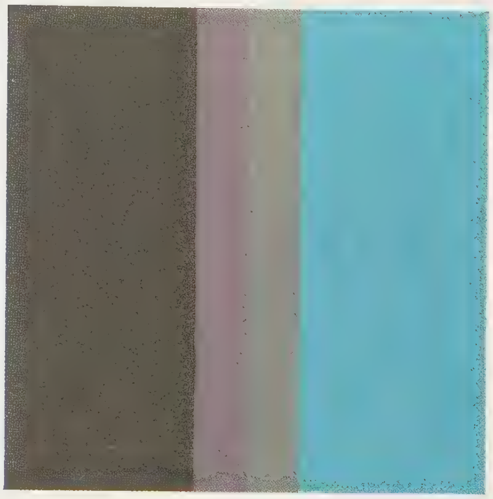
While wet, it is paper-taped to the board.

The paper stretches while it dries, forming an even painting surface that will not wrinkle when wet paint is applied.



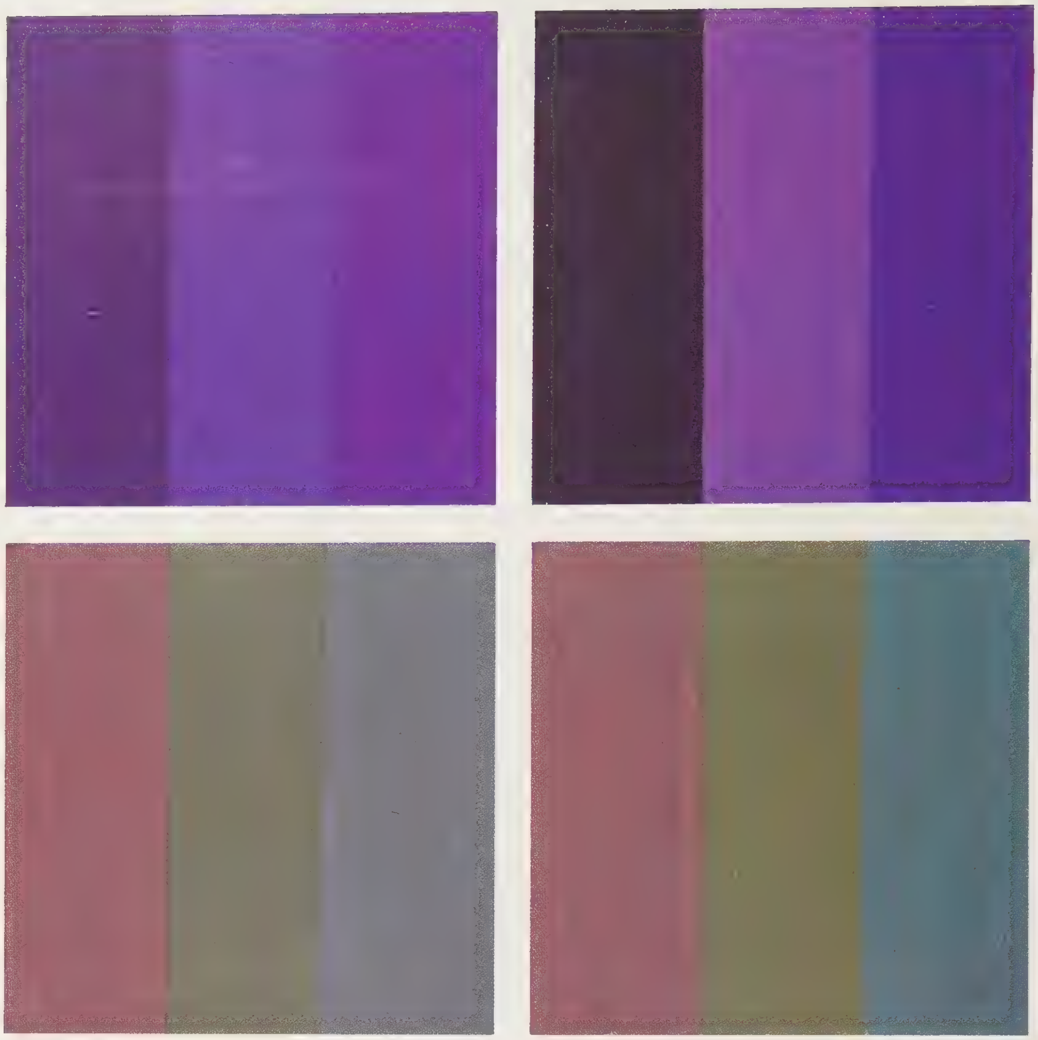
Two equal, narrow stripes of colors with the same value form the constant element in this exercise. The given pair is strongly influenced in different ways by the two variable adjacent colors: not only the appearance of the individual colors but also the relationship between them changes. The effect of one color on another (simultaneous contrast) can occur in all three dimensions. A bordering color can influence it in color direction (yellower, blue, redder), value (lighter, darker), and brightness (brighter or less bright).

In the following exercises five squares are divided into three equal sections and organized in a continuous series. One color in the selected harmony remains constant, while the other two change progressively from the first to the last square: color changes can occur simultaneously in one or more contrast directions. Equal or unequal intervals can be used to systematically change the corresponding color fields, but the intervals from square to square should appear equal. In the series on the following four pages colors and proportions change simultaneously. This quantitative change occurs continuously in intuitively equal intervals parallel to the progression of the colors.

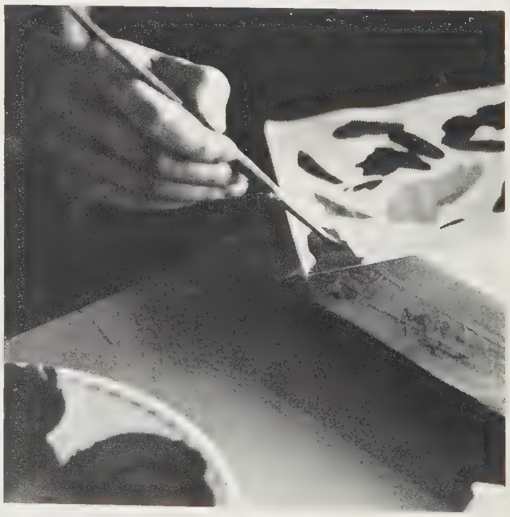
The need to coordinate the relationships between color and color, color and proportion, part and part, and part and whole confronts the students with a series of decisions. They are never encountered in isolation but only through relationships. In such complex assignments different creative abilities are developed and exercised at the same time: imagination for color, thinking and planning large relationships, and a feeling for fine distinctions of color and proportion. These abilities are prerequisites for a conscious involvement with color as a creative medium.

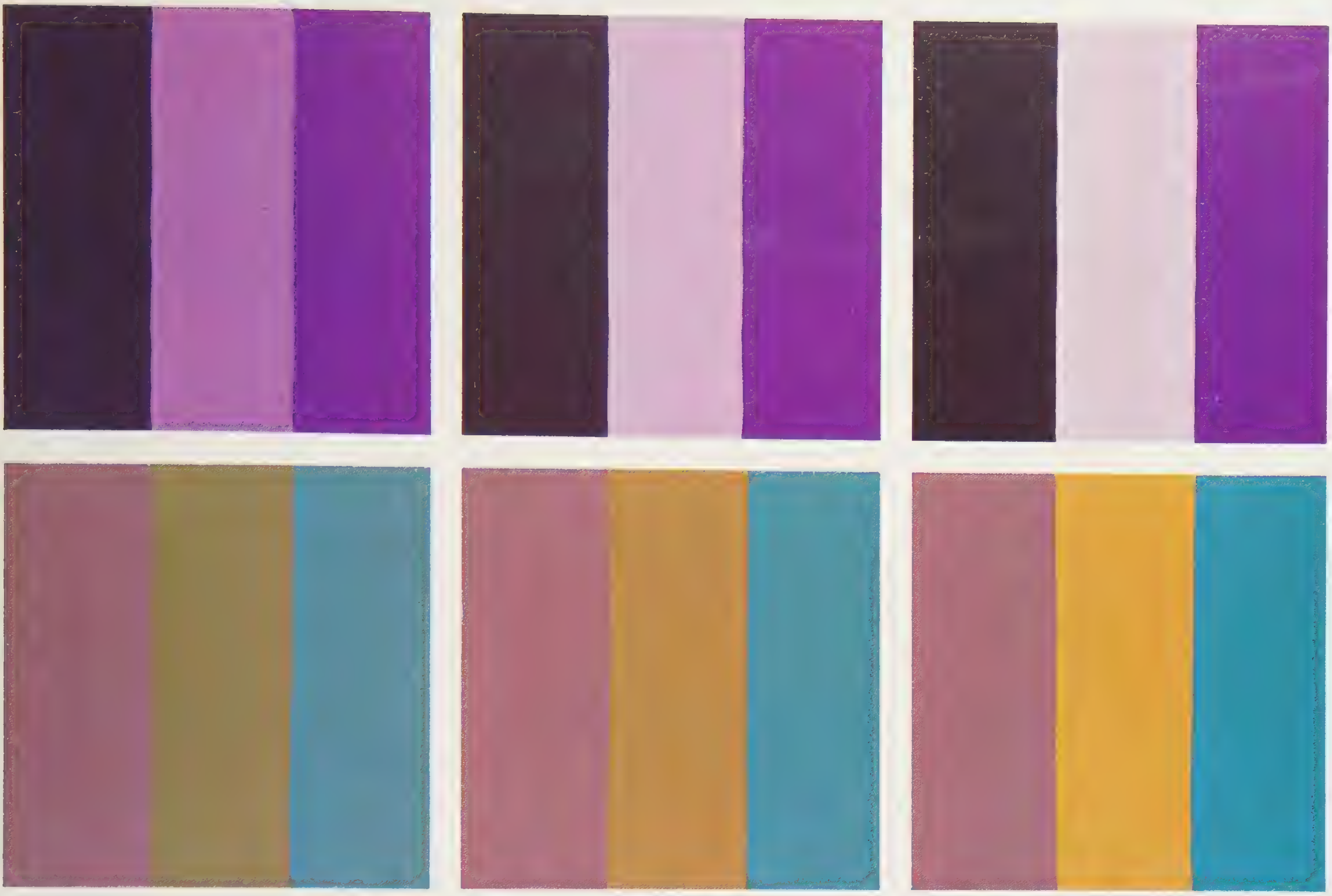


The photographs show part of the working area in which colors are being mixed and applied.

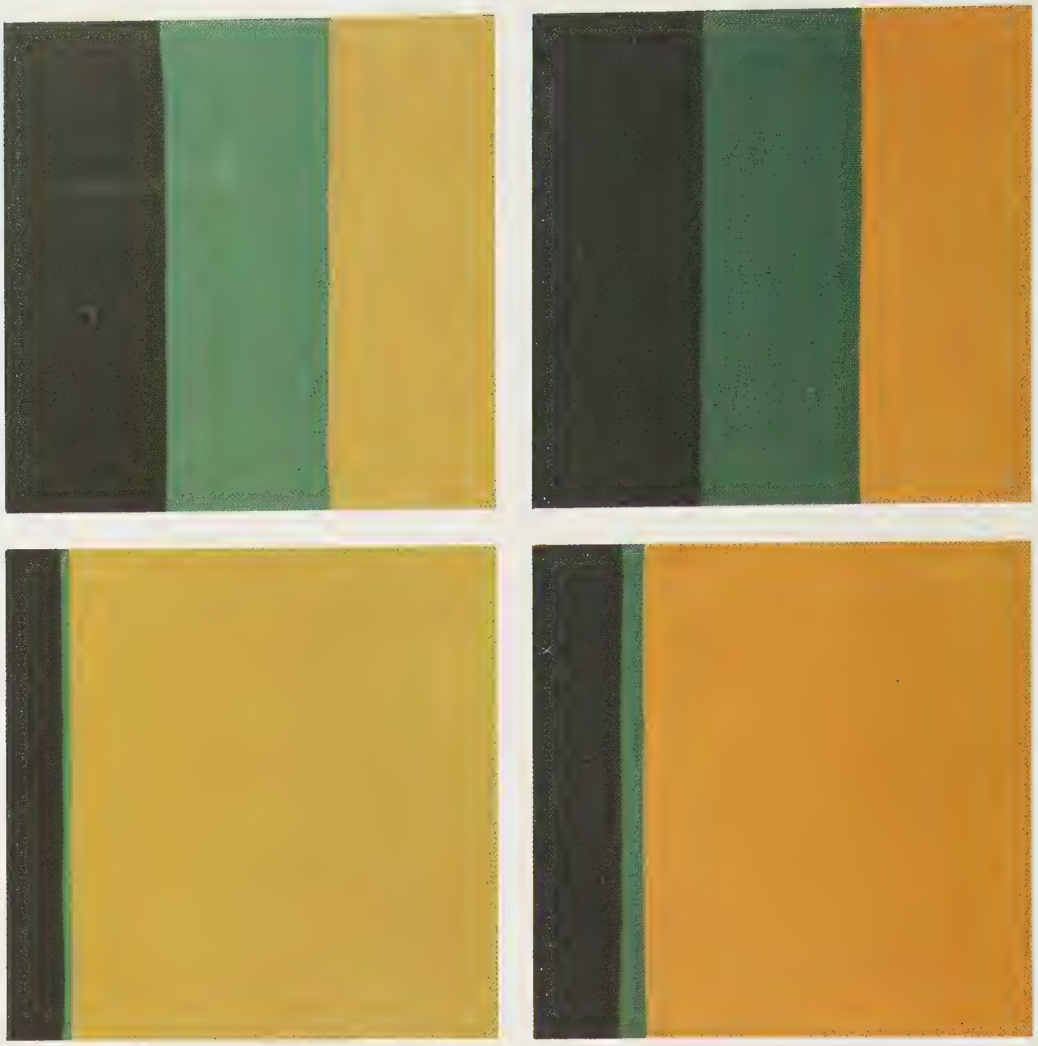
Wet tempera colors cannot be compared to one another.

Color samples are tested on the edge of a separate sheet of paper.

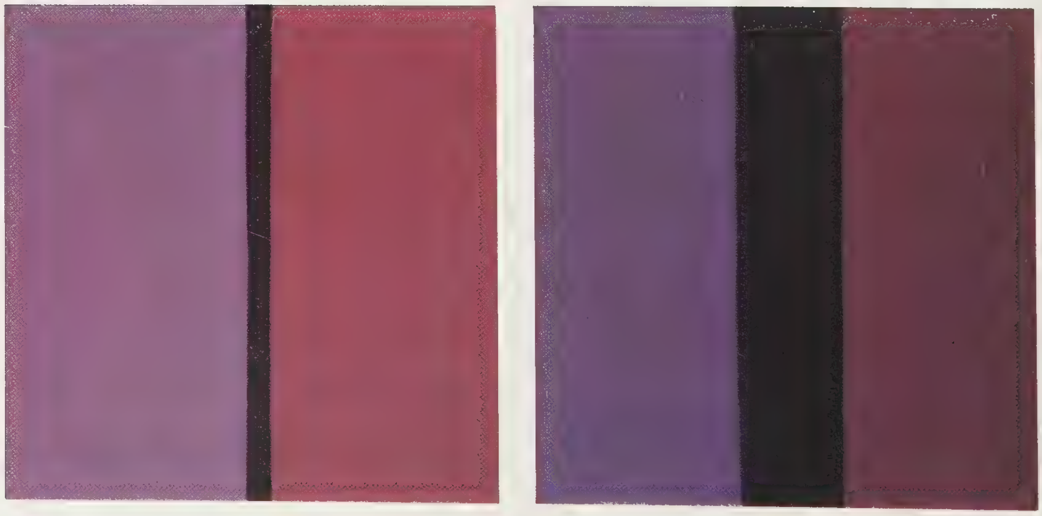


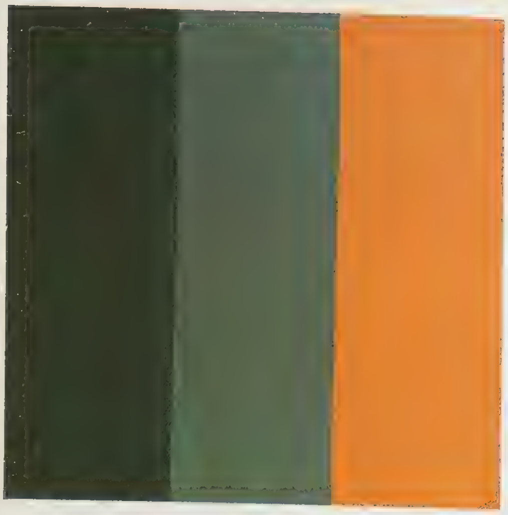


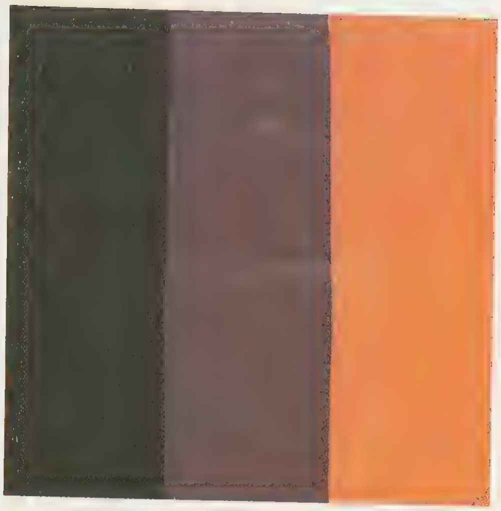
Only the dried color gives a true comparison.

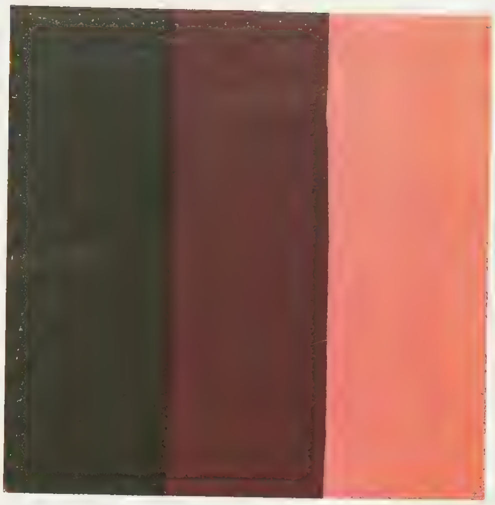


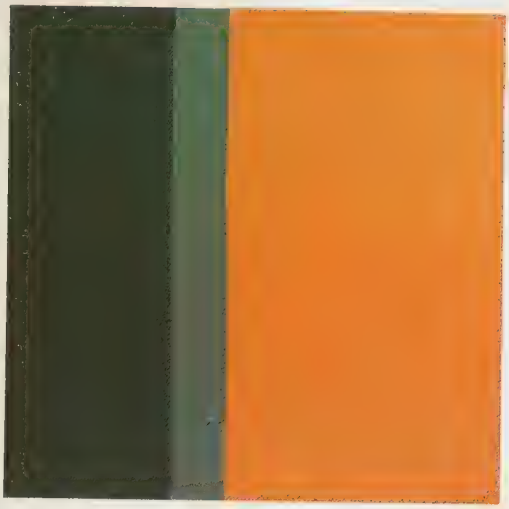
In the top row the center and right stripes, which have the same proportions, change in color; in the center row the same colors have different proportions; in the bottom row all three stripes change in both color and proportion.

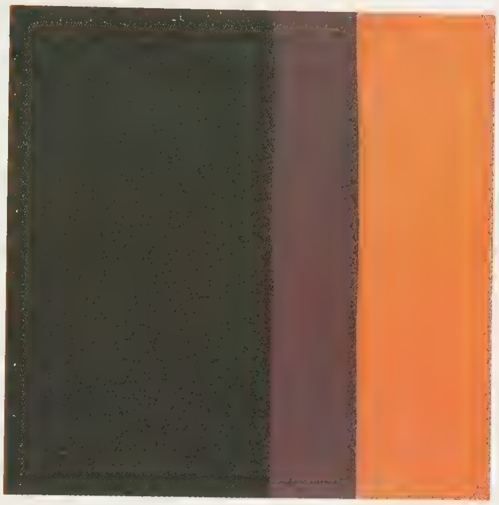


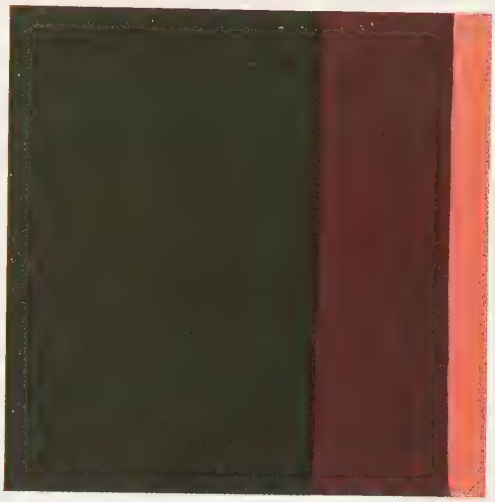


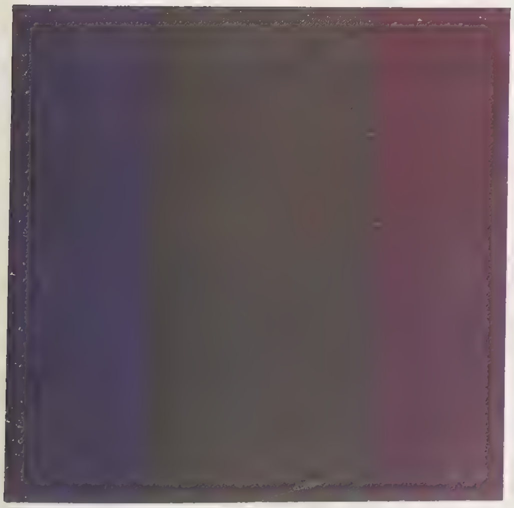


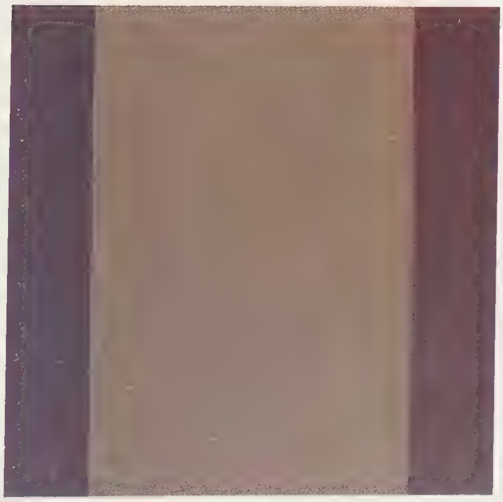


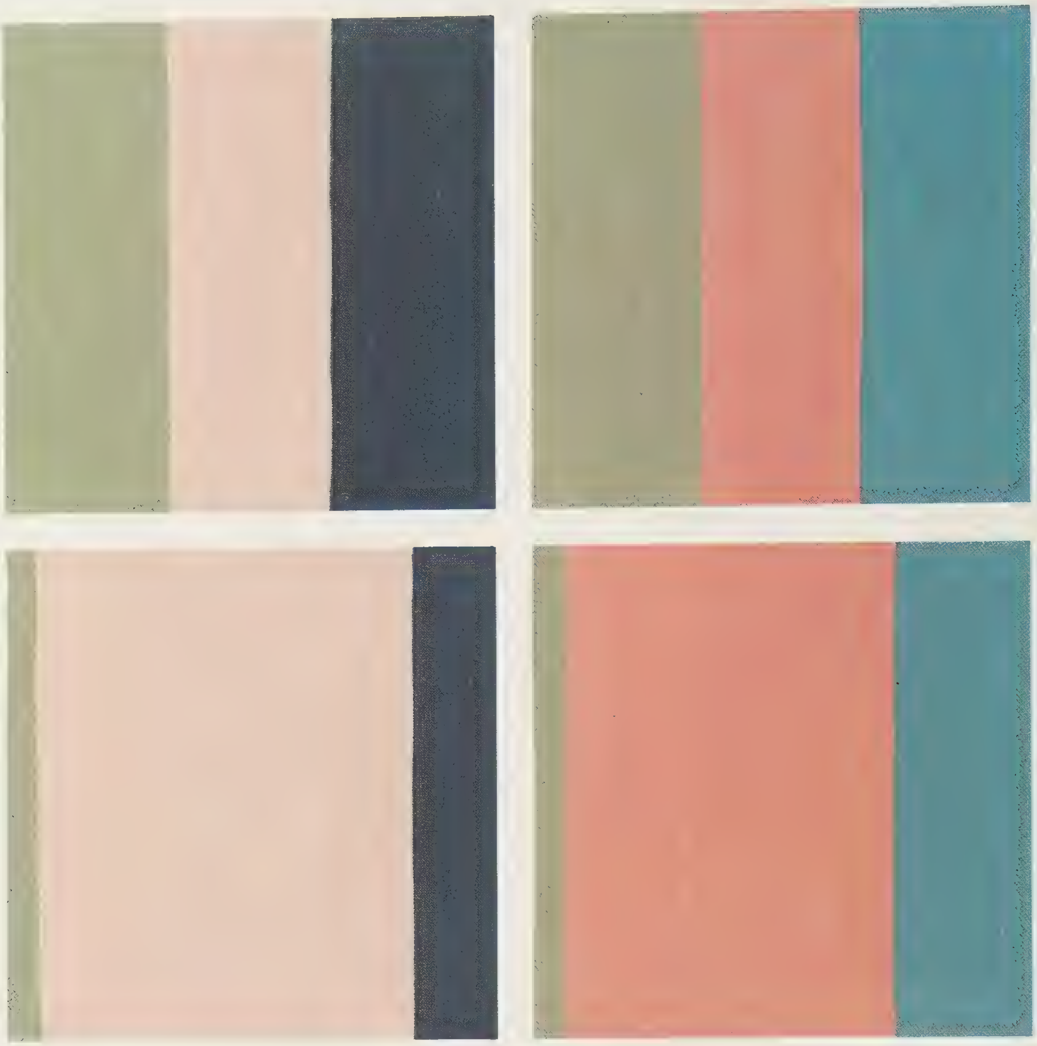




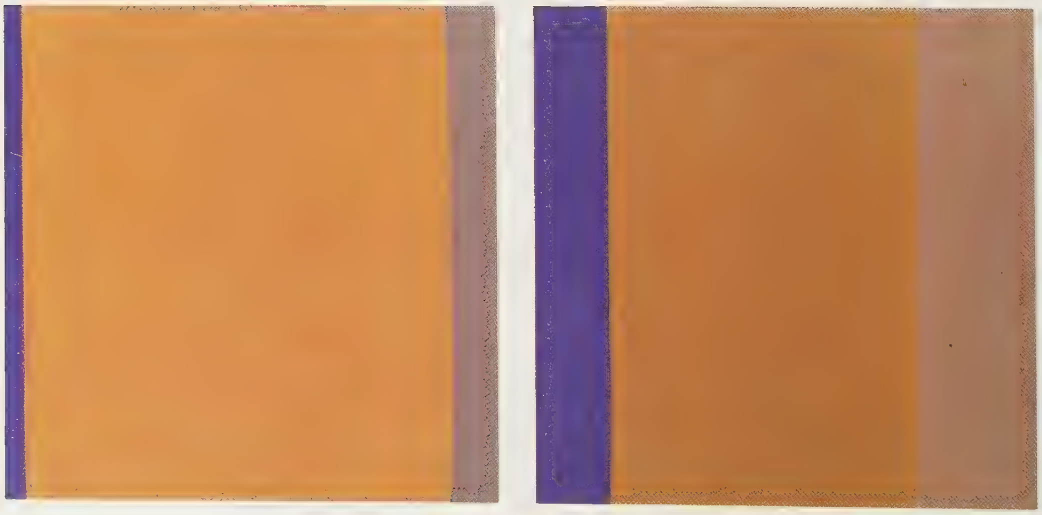


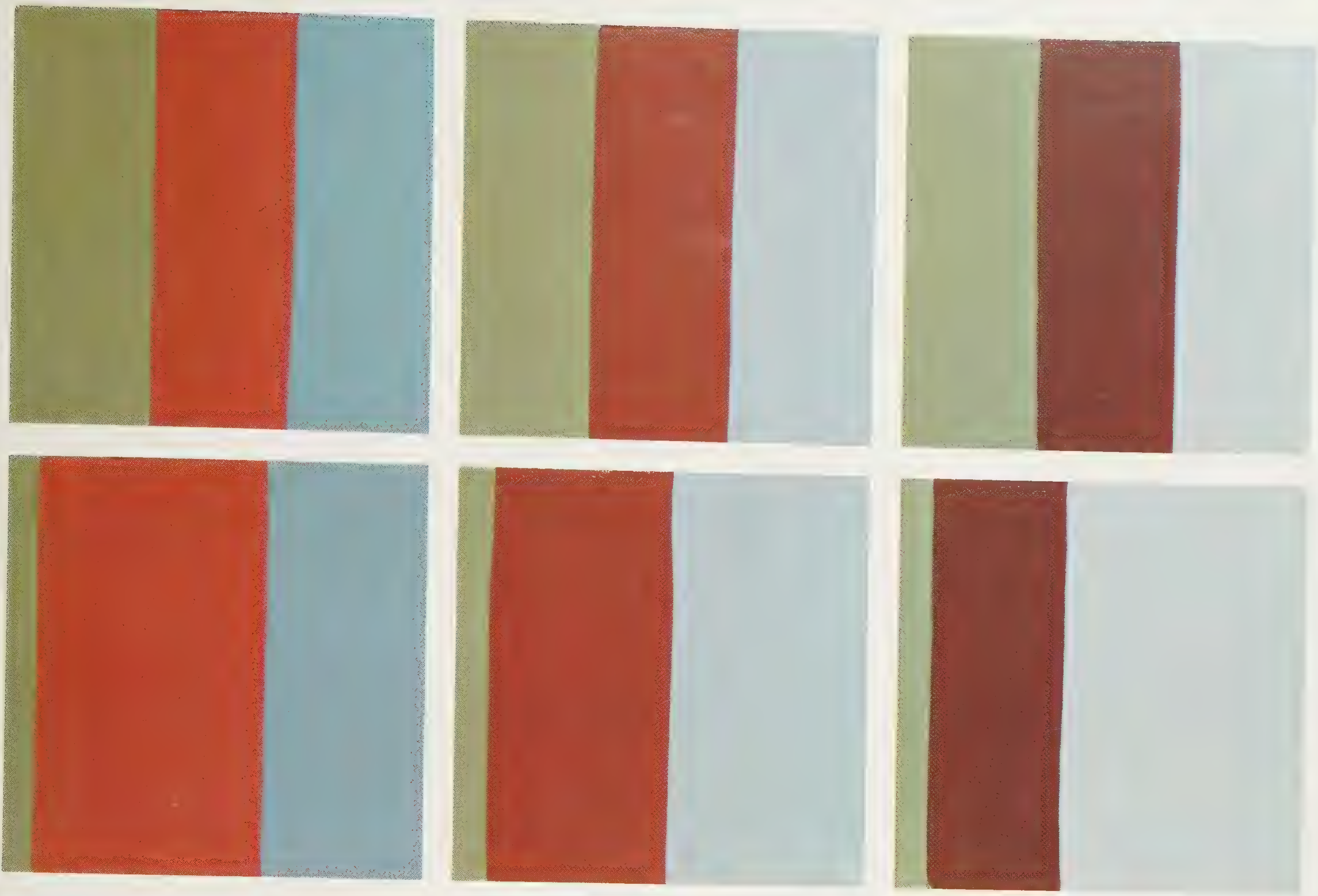


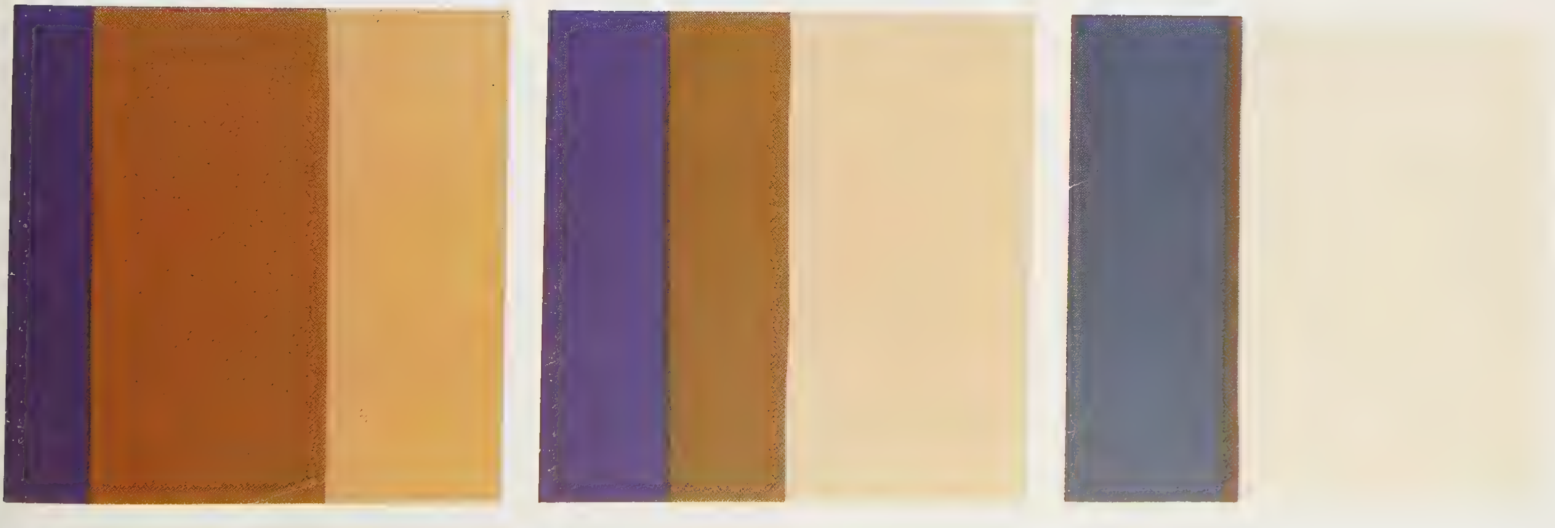


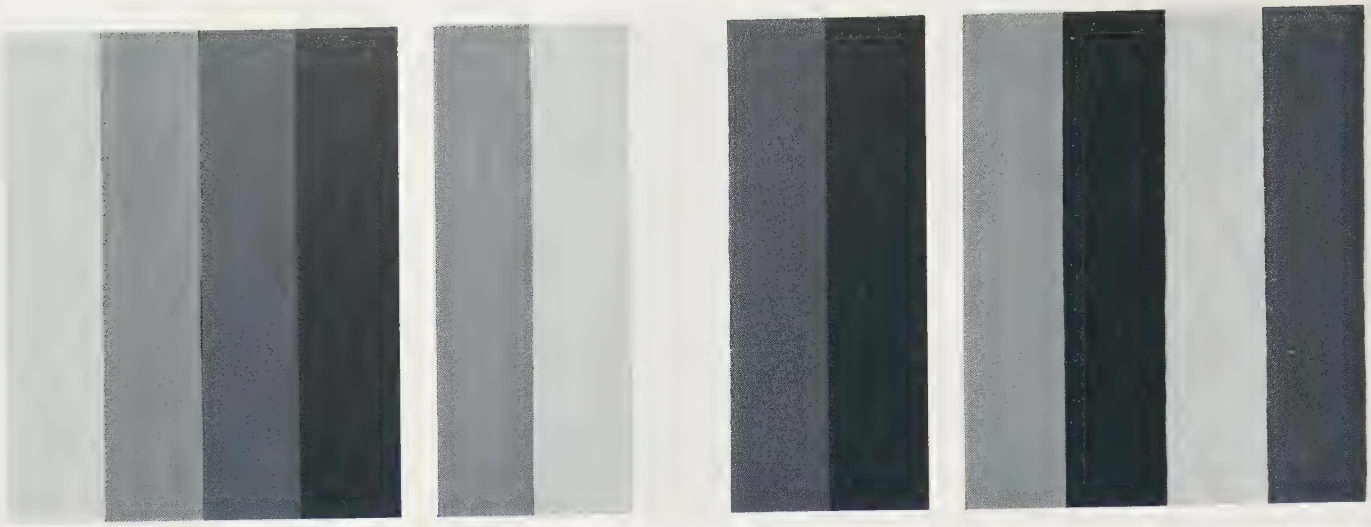


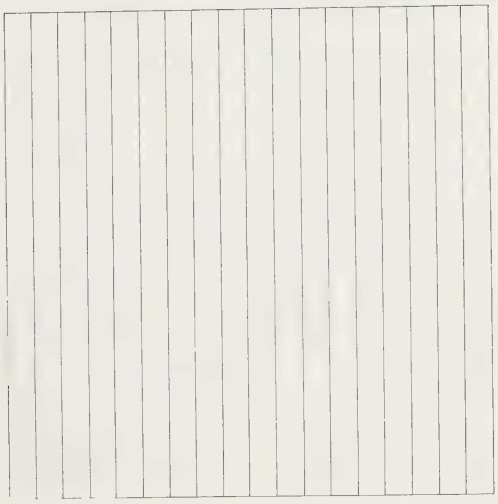
In the top row the color of the left stripe changes only slightly in relation to the other two, and the proportions remain the same; in the center row the same colors have different proportions; in the bottom row: all three sections change in color and proportion.



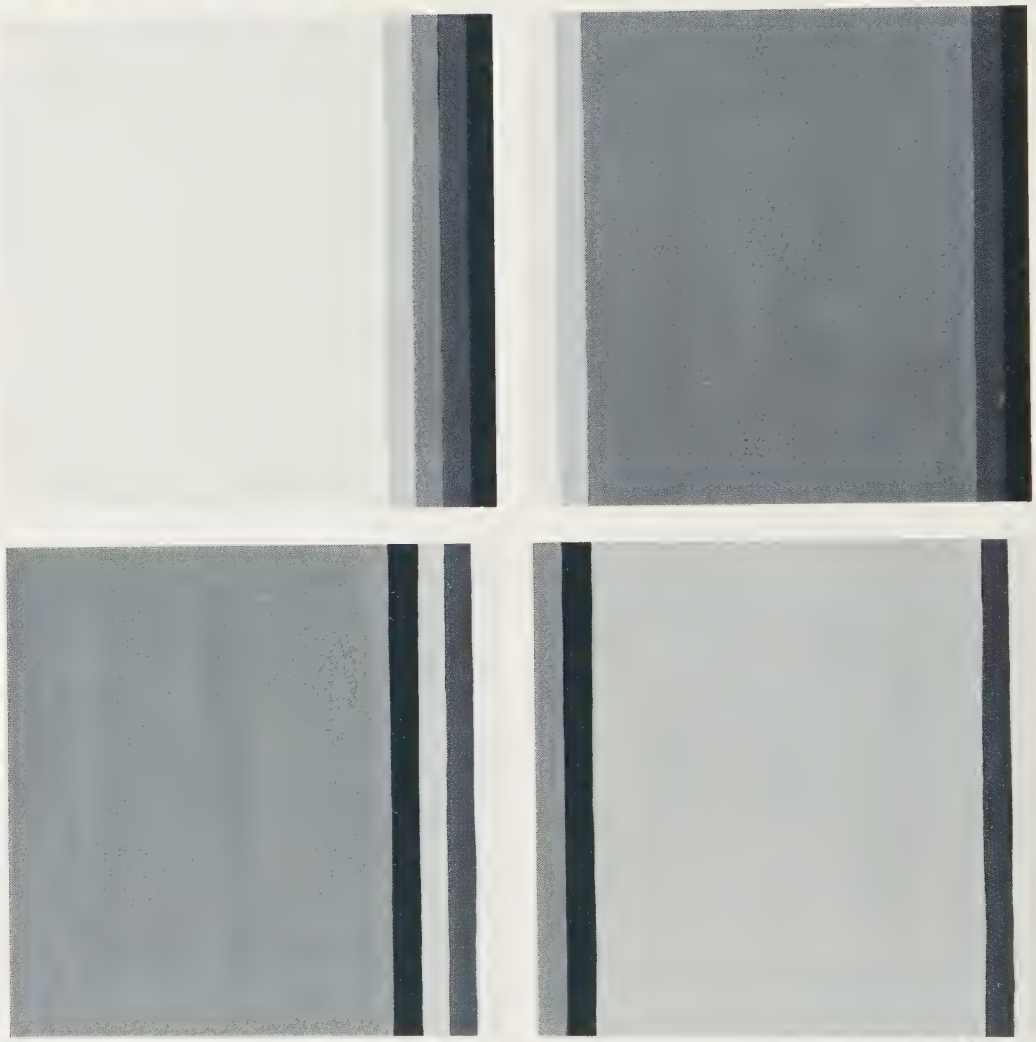






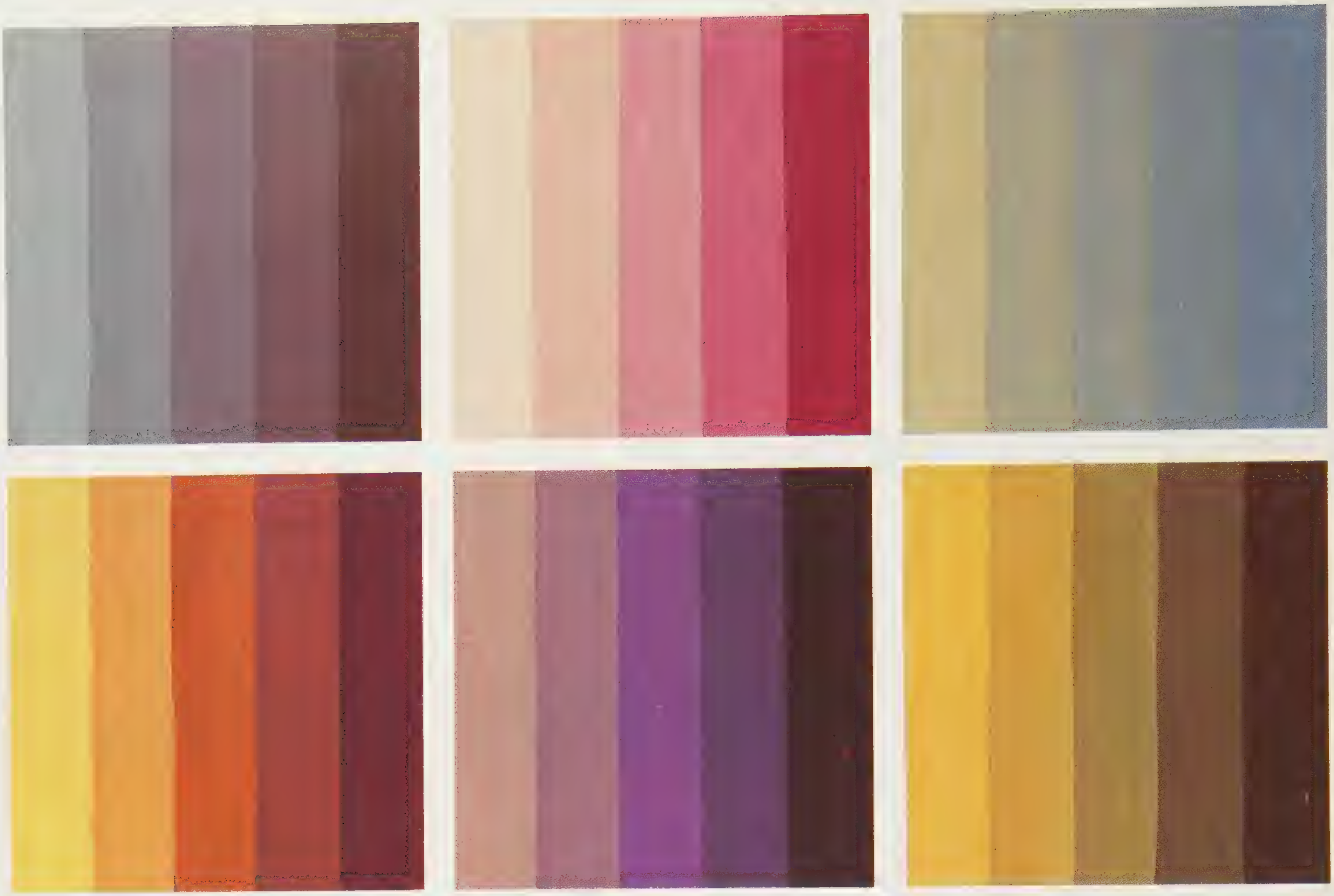


The change of proportions is effected on a finely divided grid, a useful instrument for determining clear, unequivocal proportional relationships. Even with great changes of sequence and proportion the clear value relationship of the original gradation produces a positive effect.



In this exercise five gray values in the same progression from white to black are mixed and stored in jars. They form the foundation for an investigation into value contrast. In the first exercise colors are investigated according to the kind of contrast. Here, the amount of the difference is investigated within the contrast. The five values are synchronized into a series with optically equal intervals. Quantity contrast adds a new factor to the three analyzed color contrasts. It has an essential influence on the appearance and harmony of colors. The relationship between quantity and value of a color can be observed: i.e., the possibility of strengthening or weakening the existing contrasts through a change of proportions. A change of sequence also produces a weight shift in the values of the different colors.

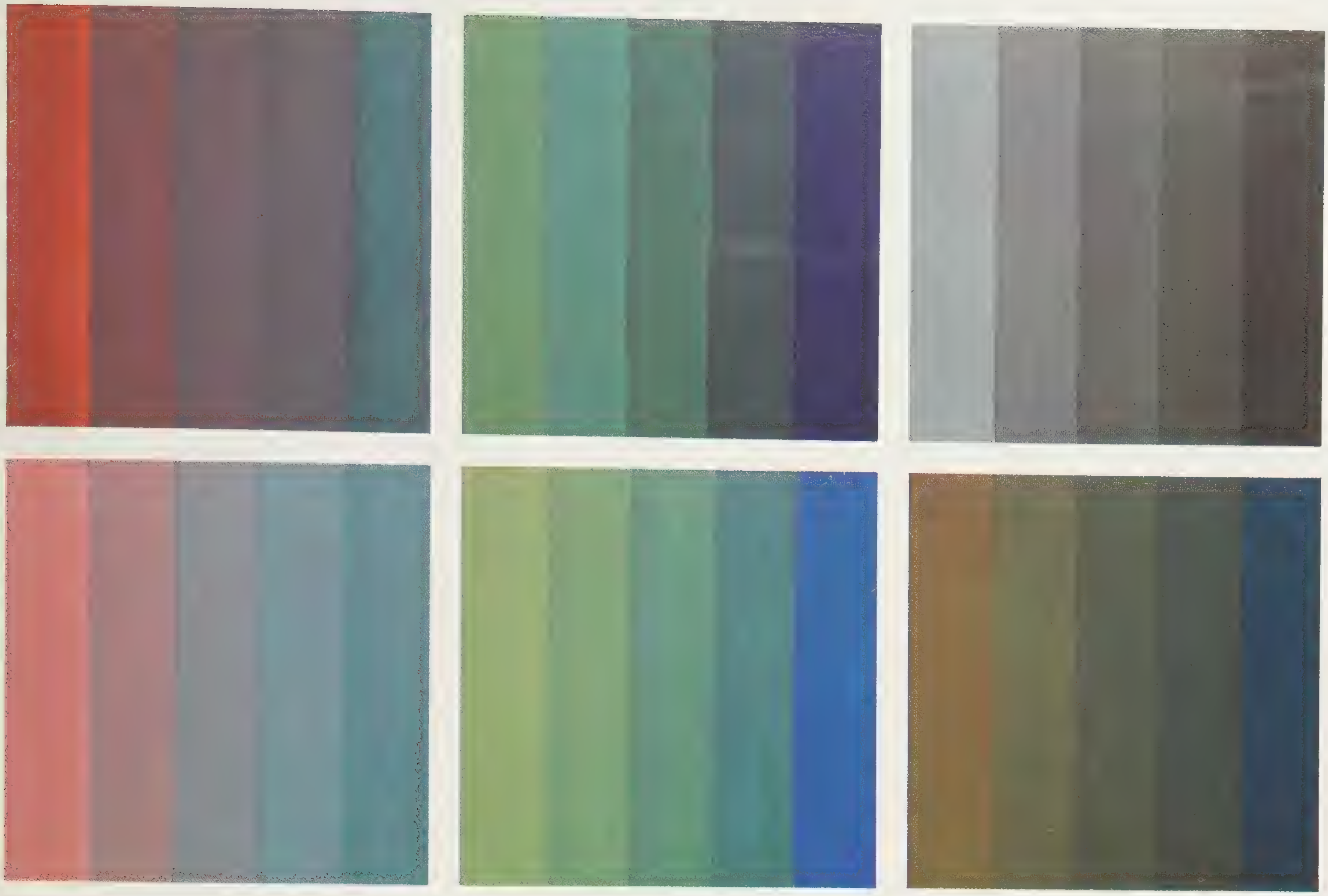
The row of examples show, above, a change in the original sequence but with the same proportions; center, a change of proportions within the original sequence; below, simultaneous change of sequence and proportions.



This exercise involves designing a five-section color progression in which the colors change gradually and simultaneously in many contrast directions. Similarities to the color wheel and value progressions alone are avoided. The sequence must also contain an asymmetrical progression from one color to another. An interesting example is selected from the many solutions. Each progression is selected by the student for a proportion exercise, and the individual colors are remixed in jars. As in the preceding exercise, equal color steps must be synchronized exactly: many simultaneous changes are not parallel: for example, in a sequence with intuitively equal value steps brightness intervals appear unequal. In such cases different criteria must be weighed and an intermediate solution found.

The photographs show the procedure for designing and organizing color harmonies.
The paint extends slightly beyond the predrawn format.

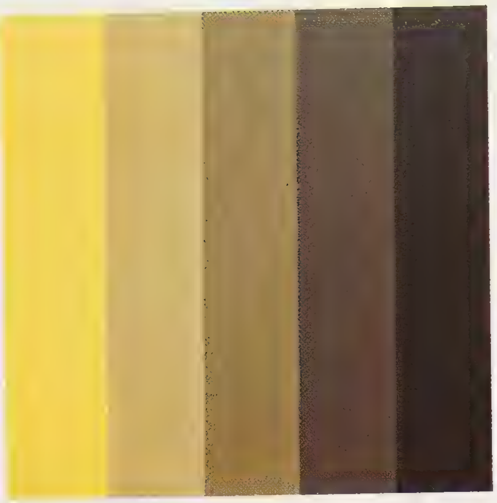
After the paint dries, the individual pieces are cut to the correct size.

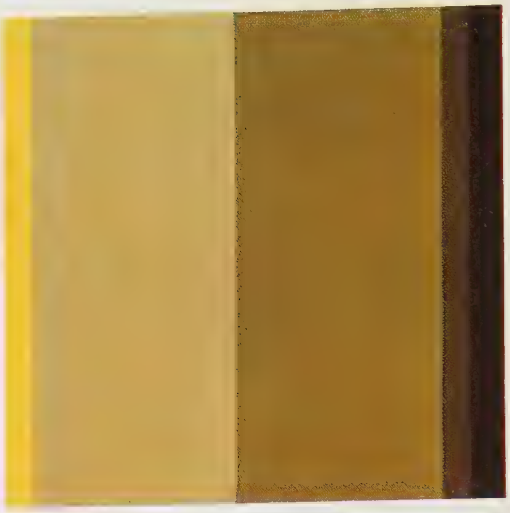
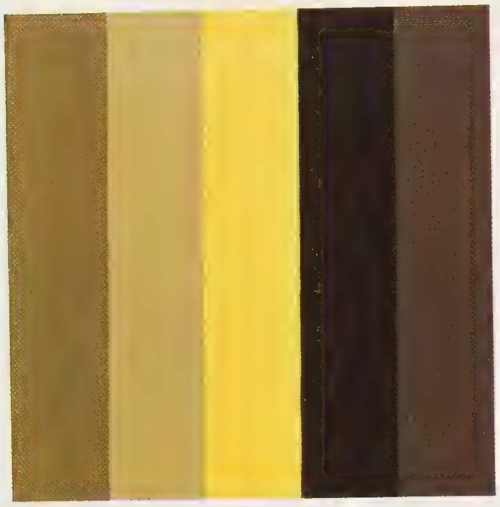
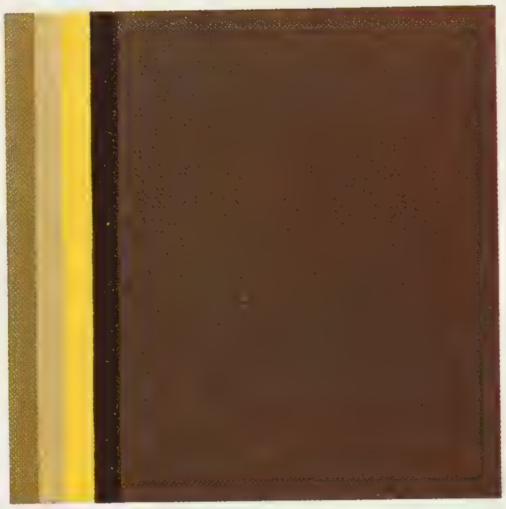
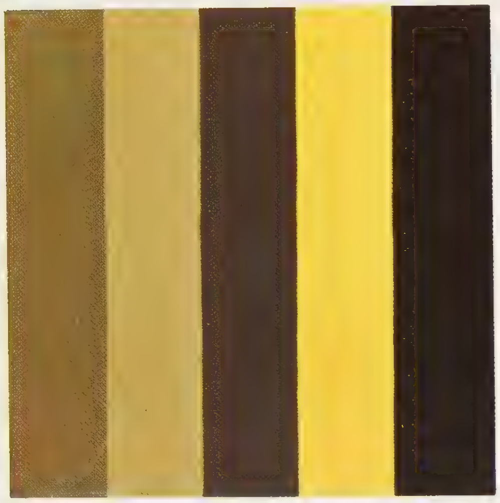
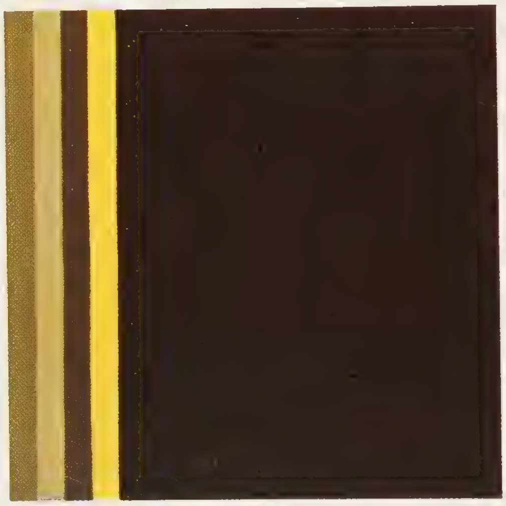
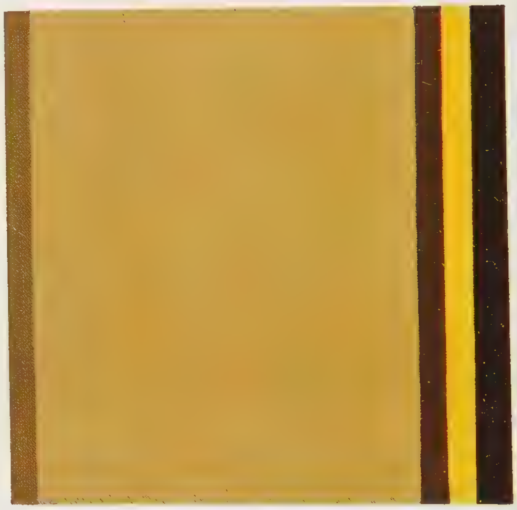


Good lighting conditions are necessary for comparing and organizing the color harmonies.

The pieces are placed on a neutral gray background for evaluation.

The resulting organization is glued on many large sheets of cardboard.

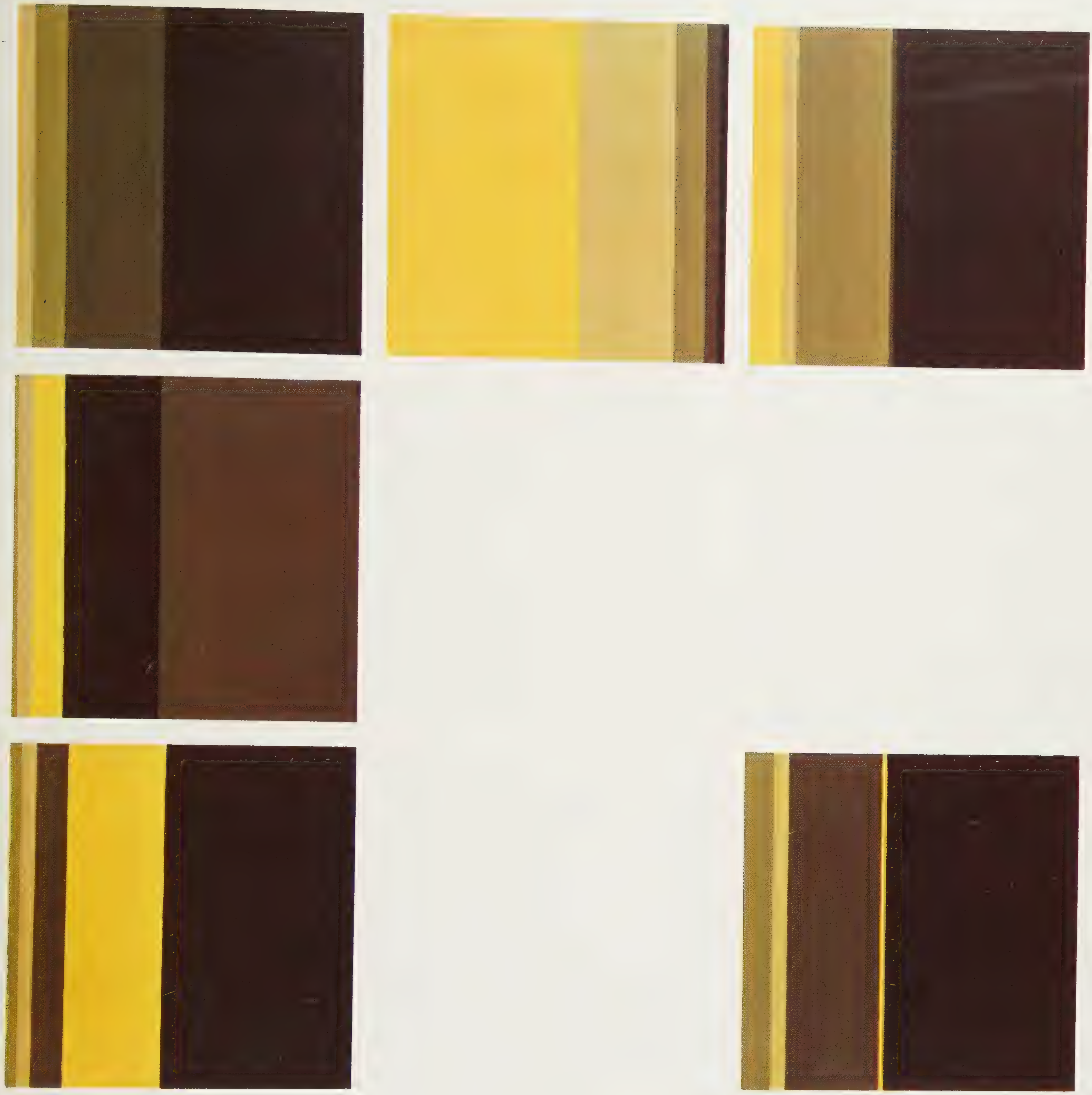


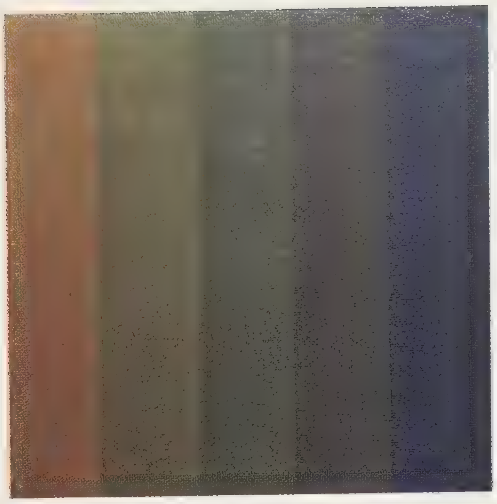
The sequences and proportions of the five color progressions change similarly to those on the page before the preceding double spread. Innumerable possibilities result despite the limitations of color and form. Systematic representation of these variations is not possible within the available time. With advice by the teacher concerning the necessity of planning each student assembles a limited program for the following investigation. It is more comprehensive than the examples shown here. Changes of sequence and proportion should be intentional, and the examples should not be chosen at random. Grid divisions and other formal structures (i.e., the above progression) are valuable aids in formulating clear proportions.

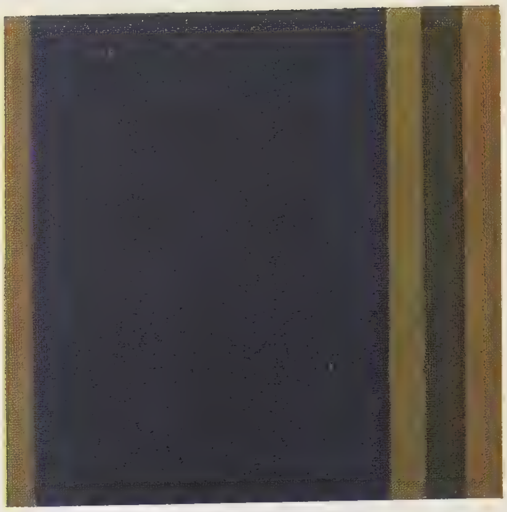
Only rarely is a student's sense of proportion developed sufficiently to find equivalent solutions without such help.

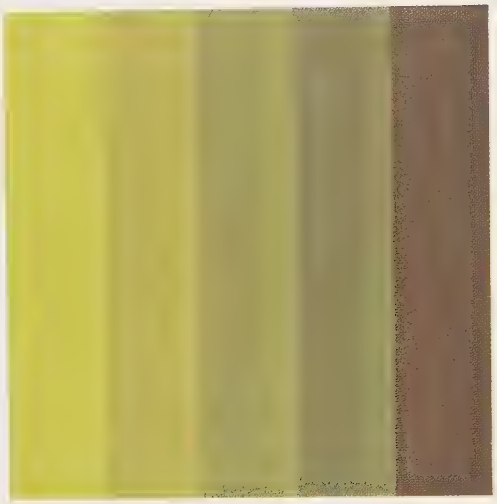
In each of the three horizontal rows on these two pages the sequence of colors remains the same, while the proportions change. The examples on this page are based on a grid.

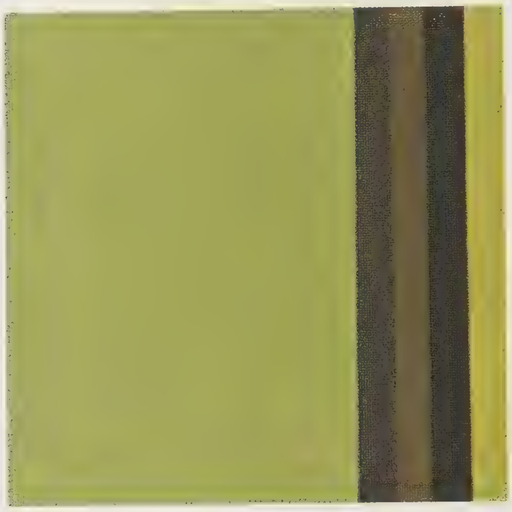


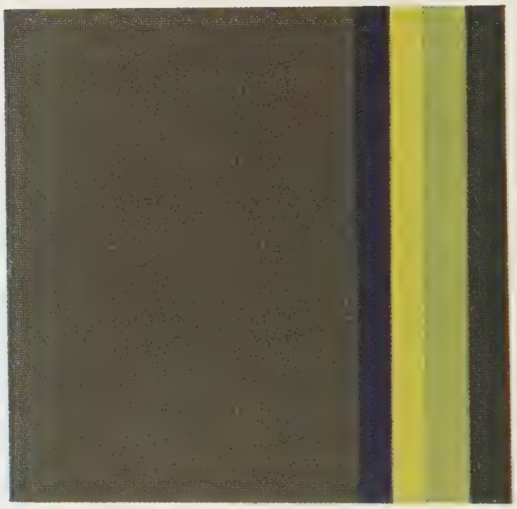
The same progressive divisions are contained in all the examples on this page. Above left, middle, the progression of colors is simultaneously increased through a progressive gradation of the proportions.
Above right, continuous color gradation with the proportions in a changeable sequence. Middle left, below, the sequence of colors is changed, while the formal progression remains constant (as above). Below right, colors and proportions in a changed sequence.





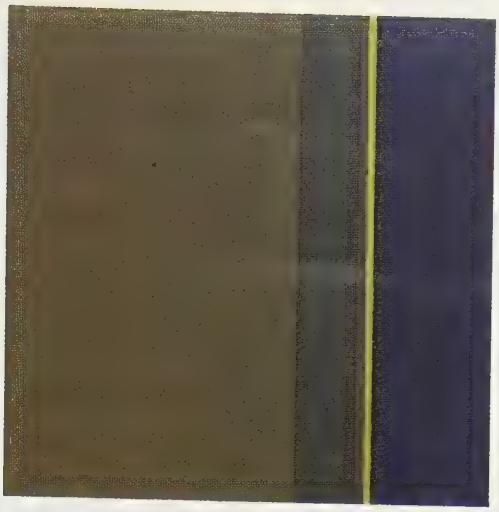


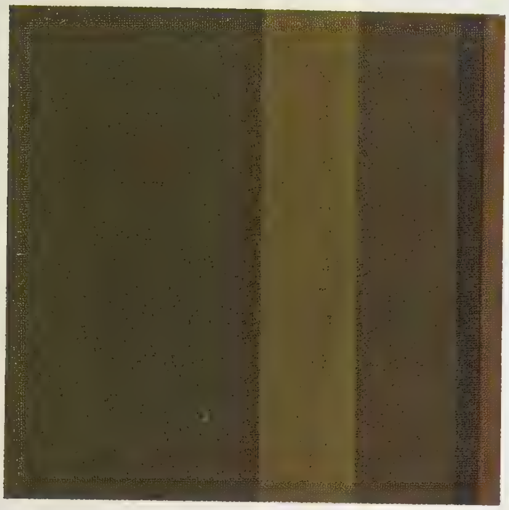


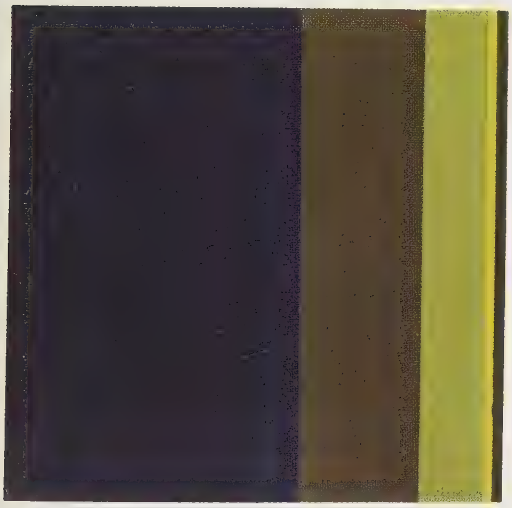
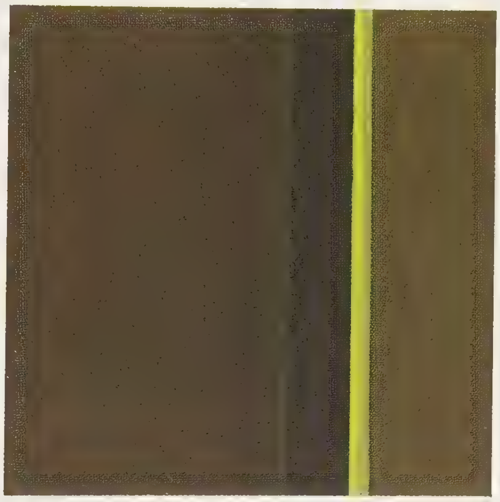
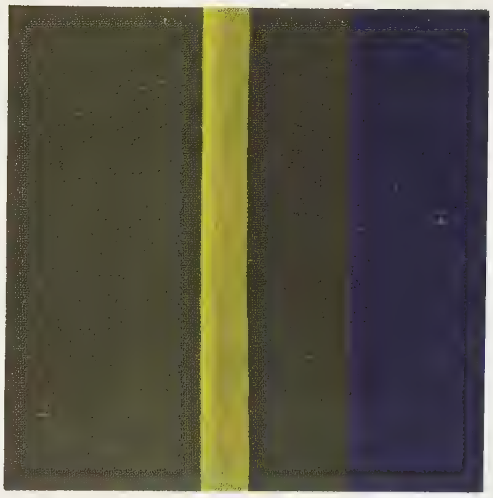


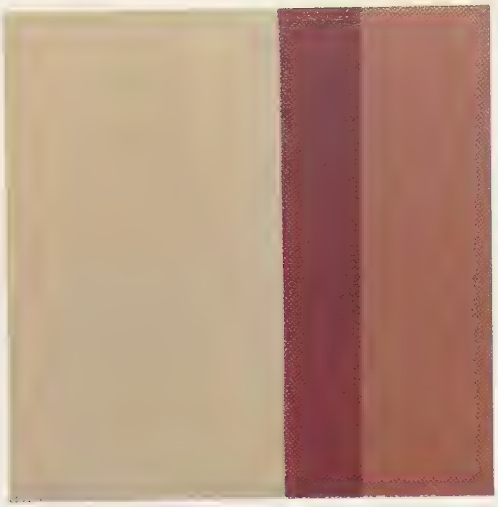
Pieces from two different color progressions are compared and combined as an extension of the preceding exercise. The students remix new color values or exchange them. Sequence and proportions are varied, and the possibilities are even more numerous in this exercise.

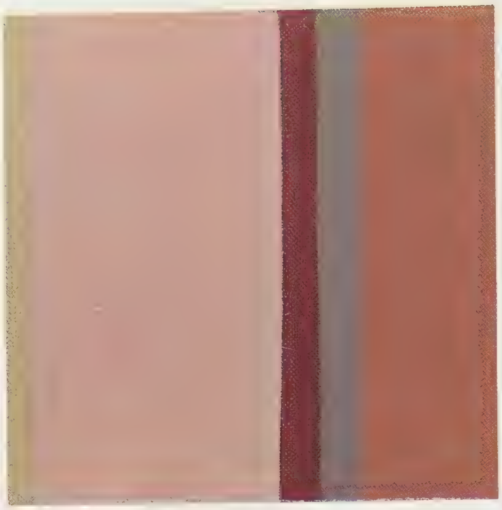
The following examples are based on the two color gradations on the left.

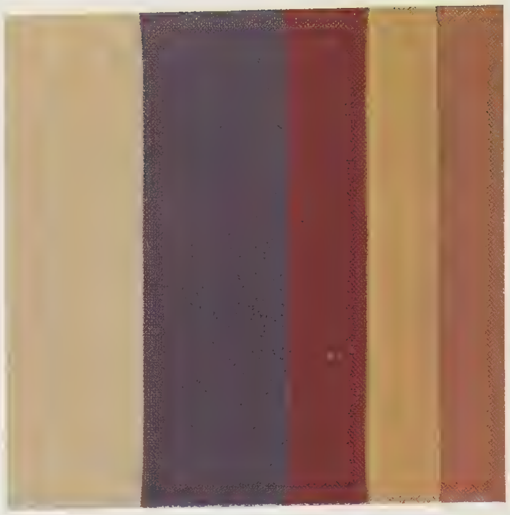


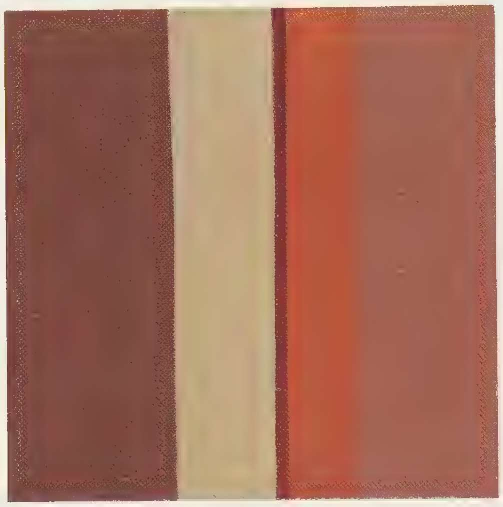


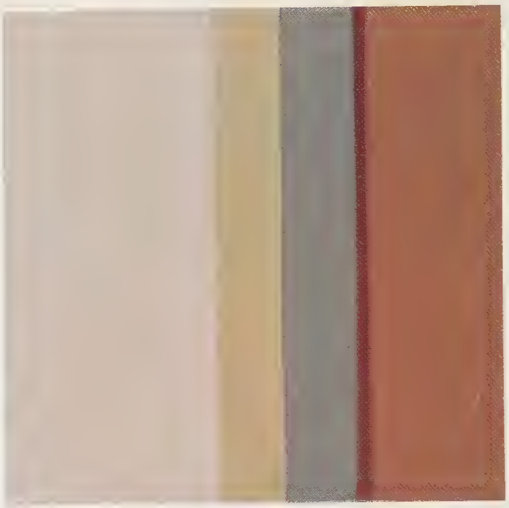










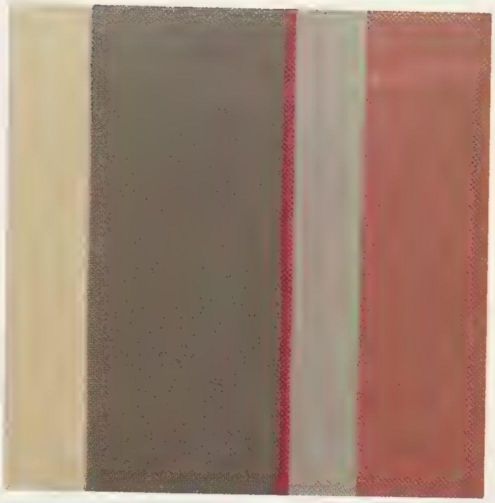


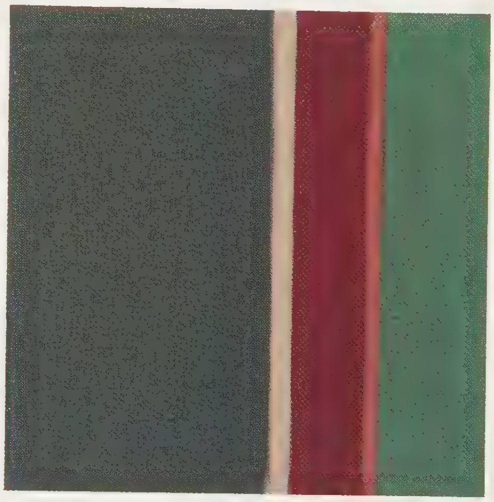


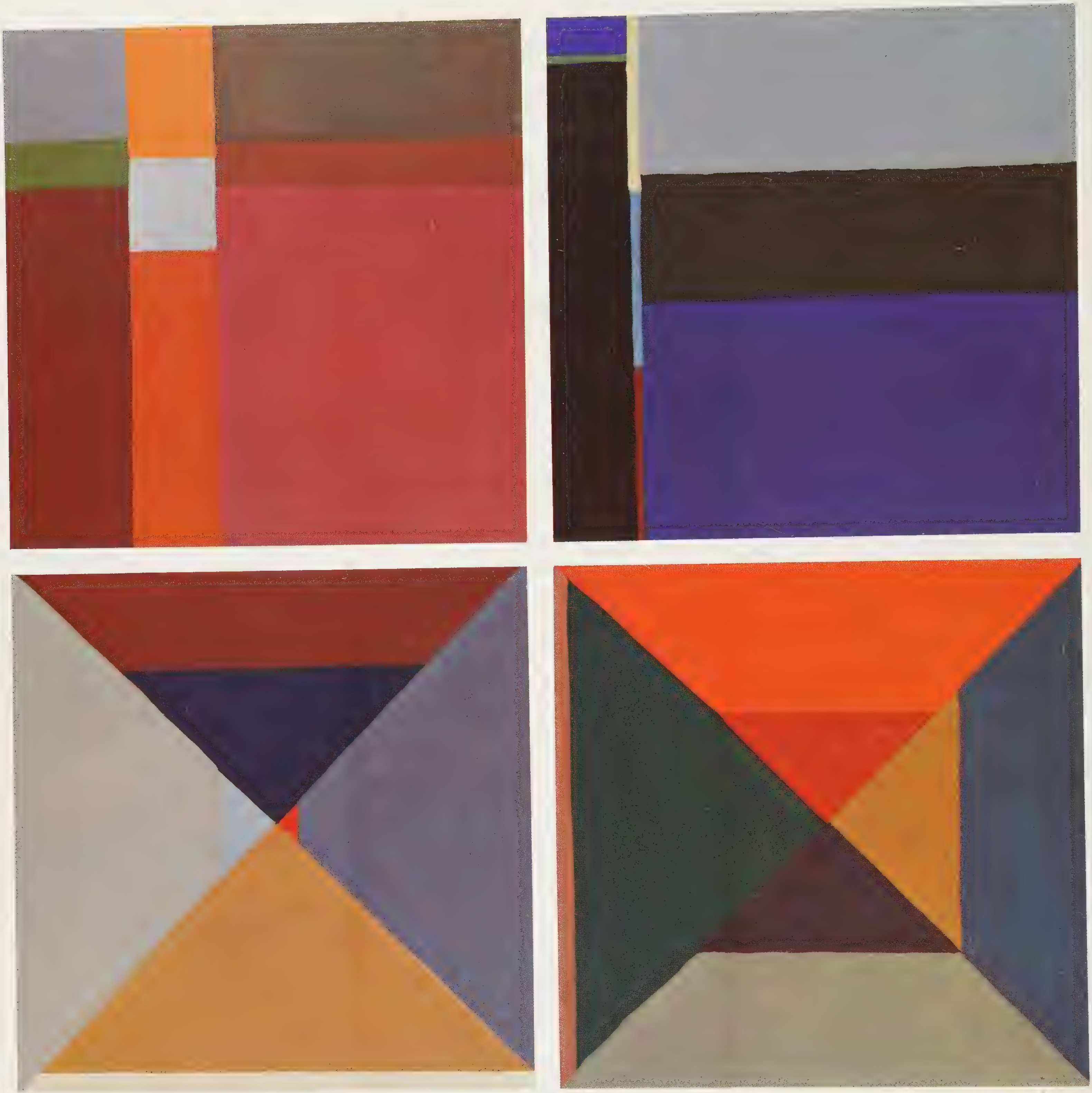
The three-part color harmony above is the basis for the examples on these two pages.

Three colors in a clear, proportional relationship form the starting point for this exercise. This three-part color harmony is expanded to five elements by adding two color surfaces. The two new surfaces must be incorporated into the existing groups in such a way that the original divisions are still recognizable. Two of the original color surfaces are reduced in size. By adding supplementary elements the student develops as many new groupings and harmonies as possible from these color and formal differentiated factors. He is not limited in his selection of additional colors. They must be brought in the existing relationships of hue, value, brightness, position, and proportion.

The photographs show the classroom environment. The exercises are completed by the students within the same period of time, but the individual working rhythms of each student can vary widely.







The preceding exercises are based on a vertical division of the surface. The above examples show horizontal divisions. An abundance of new formal possibilities result from adding another simple element—contrast between horizontal and vertical forms, contrast between above and below, and surface bordering on more than two sides—so the color relationships are more complex. The mutual relationship between color and amount resembles that between color and form. In the two examples below the four triangles formed by the diagonals are divided into two different-size fields parallel to the format. Both examples are taken from complex color-form sequences.

In this course fundamental concepts and design processes are developed in elementary exercises that require creative decisions. Clearly determined conditions are manipulated, analyzed, and developed over a period of time, using simple graphic media. An understanding of the entire working process is the result. Criteria are defined and differentiated according to the actual working situation.

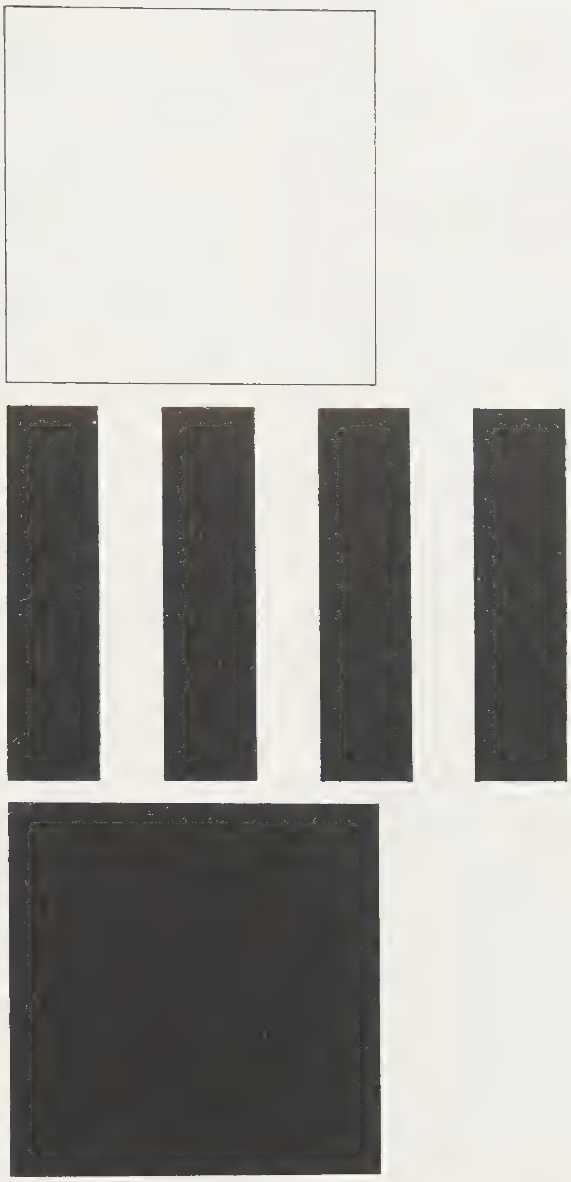
Criticism and control of the individual's work increase his sensitivity, independence, and competence. Insight into and perspective on the abundance and complexity of designing processes develop from a close collaboration with the teacher and within the group. Principles of aesthetic composition are not offered and single, chance results are not goals. Technical perfection and composition are only part of the design process.

Group relationships form the basis for decisions, deeper involvement with design, and refinement of creative quality through constant, unprejudiced comparison and evaluation of the work. The personal abilities of the students form additional factors in the creative processes which are differentiated in several activities: a clear, determined starting point for a problem situation; critical definition of many possible solutions from abundant trials; selection of a theme, investigation of variations within the chosen theme: the order and definition of the relationships among the variations according to criteria of the individual theme; integration of the different criteria into vertical and horizontal relationships among the single elements; choice of a vertical or horizontal direction from the discovered order; refinement and supplementation of the intervals and relationships from a logical and qualitative point of view; application of experience derived from these studies to new, complex goals. This development process is a foundation of visual communication.

Due to the length of time required to develop the design process on different levels, it is necessary to limit technical skills. Students work with black-paper, knives, scissors, and glue on white paper. The paper can be cut, folded, torn, or turned over. The graphic appearance of the surfaces and forms constitutes the foundation. Designing with paper has the advantage that formal elements can be exchanged or shifted, allowing a flexible, comparative working method. The development of skills and exactness results from the working process and the abundance of pieces. Sensitivity to differentiated formal qualities develops simultaneously. Four phases of an exercise are completed by the students in approximately the same amount of time, allowing group discussion, comparison, and exchange of experiences. Insight of the individual into the visual and conceptual aspects of design is expanded.

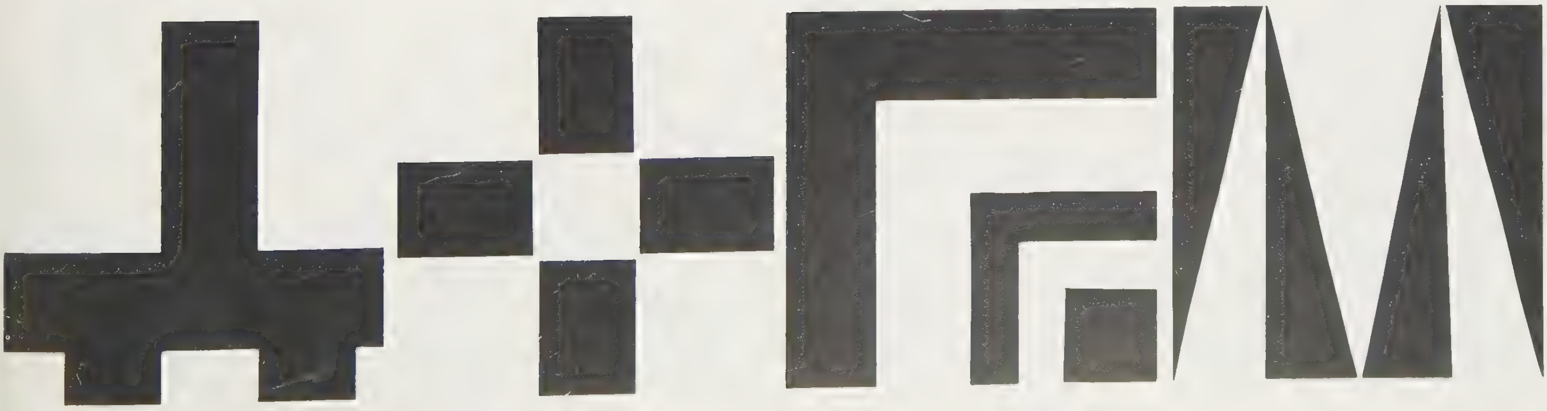
The examples on the following pages show different sequences, starting from the same conditions. They are the exercises of three students and only show a section of the possibilities. Similar work results are represented to document the different personal approaches. Four equally wide black paper strips and a square format corresponding to their combined width form the starting point of this exercise, in which the four stripes are always contained in the square. If they are lined up vertically, a black quadratic shape is produced, and they are no longer readable as a graphic form.

Elementary creative manipulations should be found in the first exercise phase, in which the four strips are again recognizable. The actual manipulation must be clear and must determine the graphic form. Composition and formal aesthetic qualities must be subordinated to the function and unequivocal recognition of the strips: they should not be used to compose decorative ornaments, basic shapes such as triangles and circles, the structure of a graphic symbol, or pictorial images.

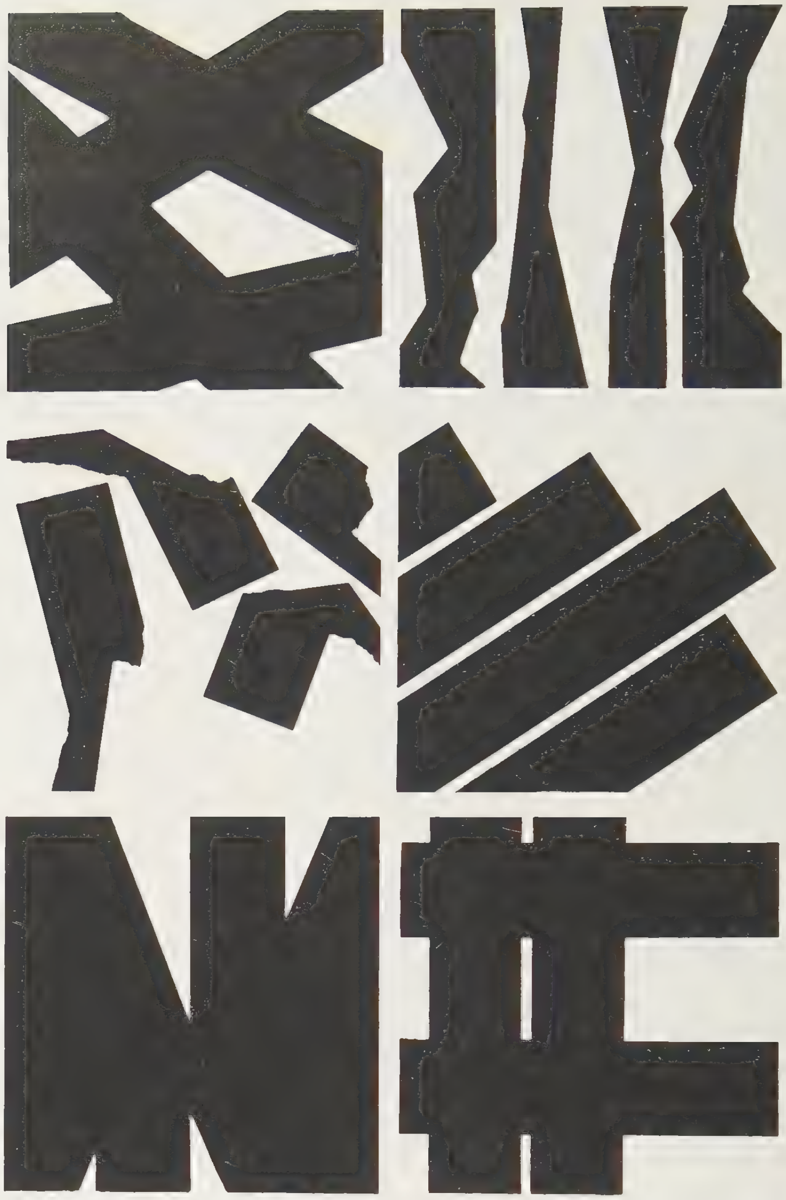


The three illustrations above show the initial solution, the format, and the four equal strips, which are arranged vertically to form a black quadratic shape.

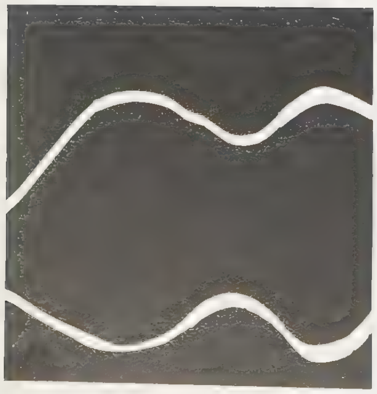
Here and on the following page, below, the examples show attempted solutions that are unsuitable to the defined limitations and functions. Symbollike forms, angles, triangles, curved lines on a black background, pictorial formations, and figures are produced by the four strips.

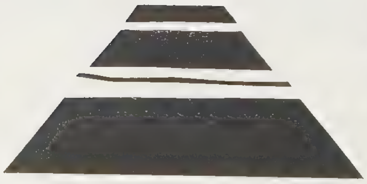


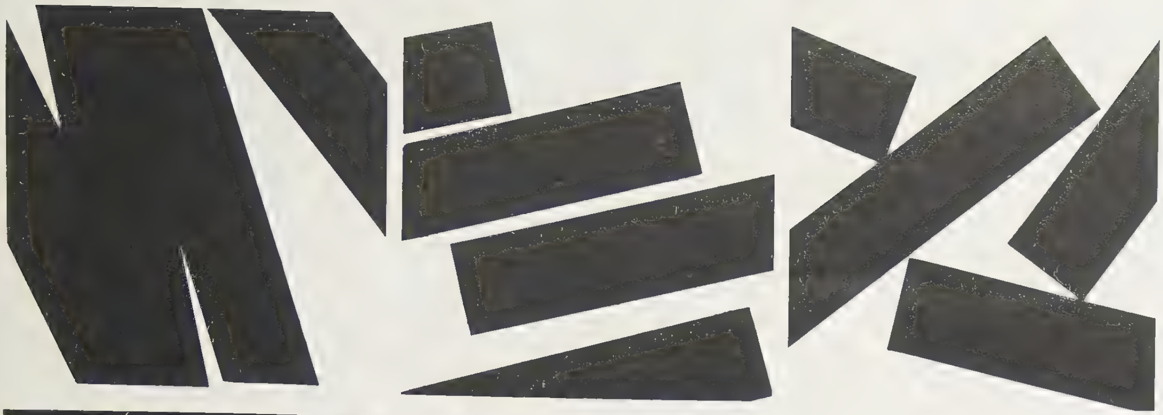
Corresponding to his abilities, each student creates as many different solutions as possible (at least 15 to 20). Expected solutions designed through spontaneous experiments form the foundation for a general definition of criteria and for differentiation within the functional limitations: false or unclear solutions are fundamental in understanding the different processes and lead to unequivocal solutions. In each solution the formal character of the manipulation should be uniform; combinations are justified only if they serve the intended function. Variations on a single solution do not count as different solutions. Three-dimensional designs or changes merely of surface structure are eliminated with reference to the subjects "Dimensional Design" and "Material Study". After comparing his designs and determining which are clear solutions, the student selects one example as a theme (form model) for the second phase of the exercise.

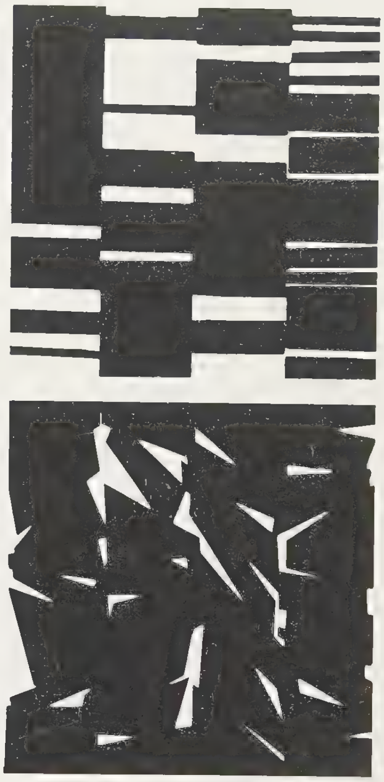


The examples on the right show several solutions by the same student. A few different possibilities of oblique positions and crossings are produced by shifting the strips. The second example in the top row is done by shifting, tearing, and folding. The first and third examples in the third row show simple diagonal and horizontal cutting; in the third example in the second row parts of the strips are removed by tearing. The fourth example in the third row is a borderline case: the thickness of the strip is changed, but the interval of its width is preserved. With the exception of the borderline case, each of these examples could be selected as a form model for the second phase of the exercise. The two examples on the far right were chosen. They are formed by removing parallel cut elements and shifting diagonally cut elements. Selecting two different processes has a complicated effect on the sequel.





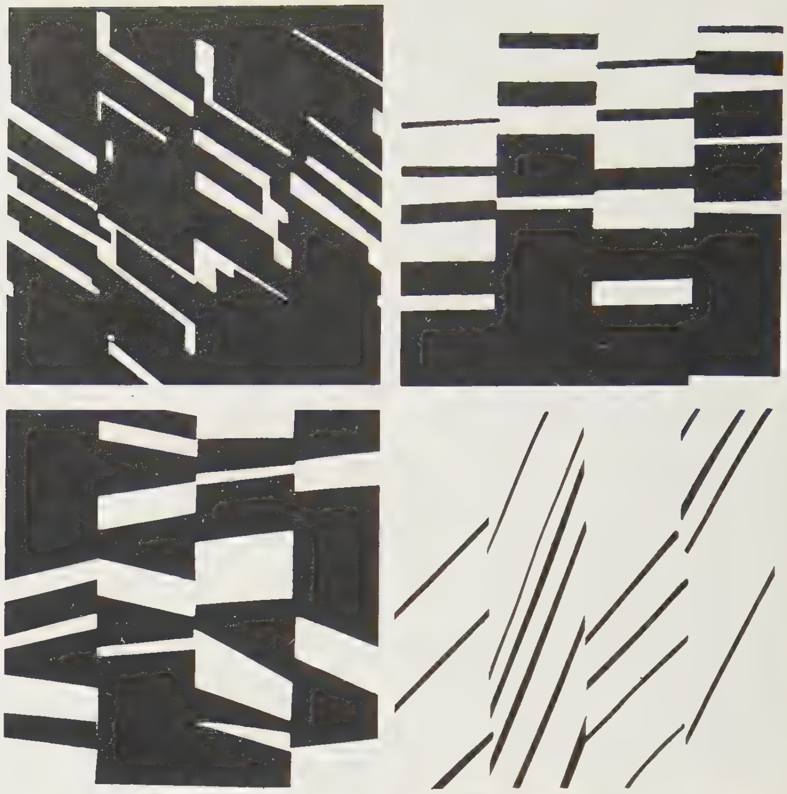


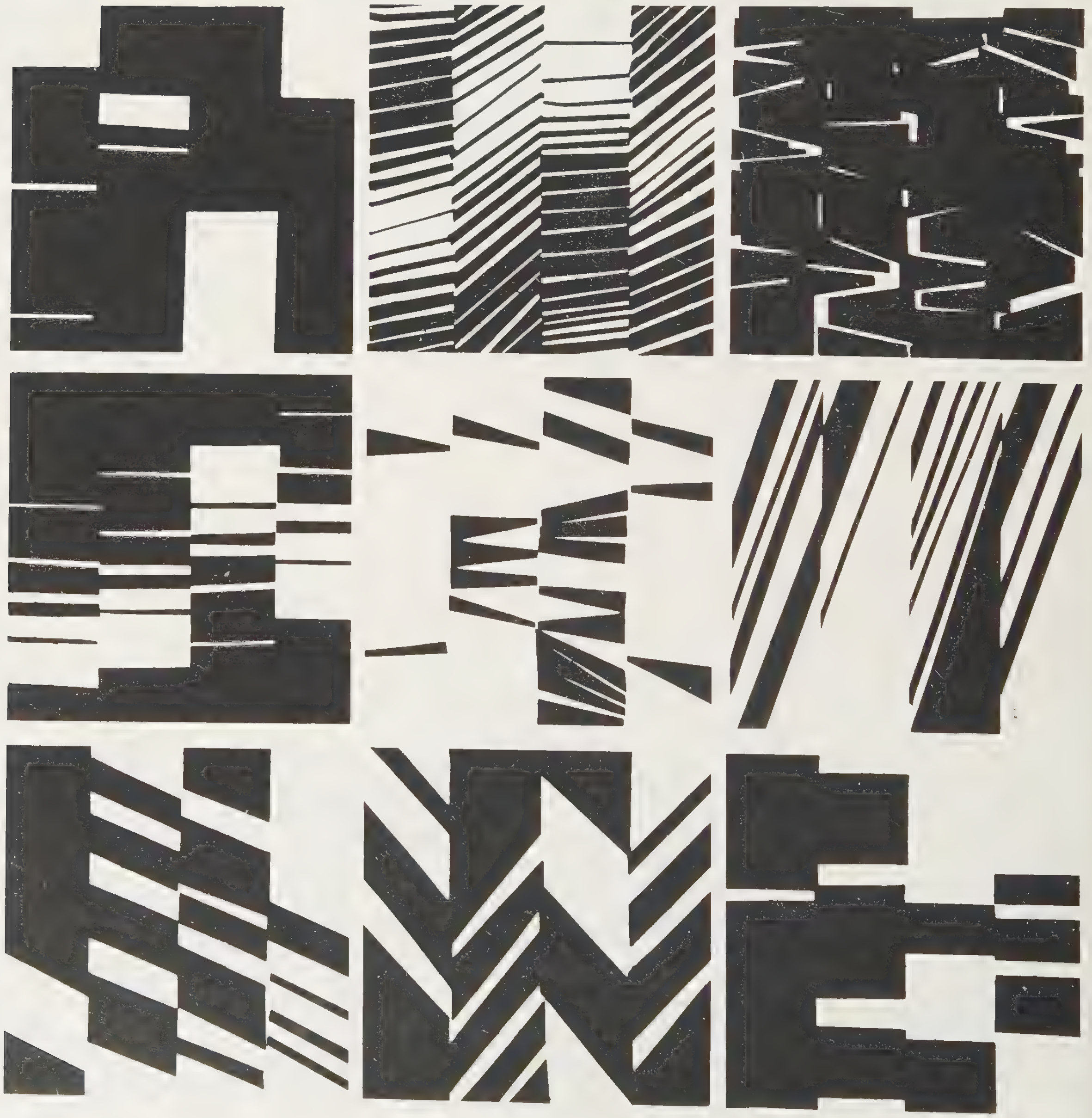


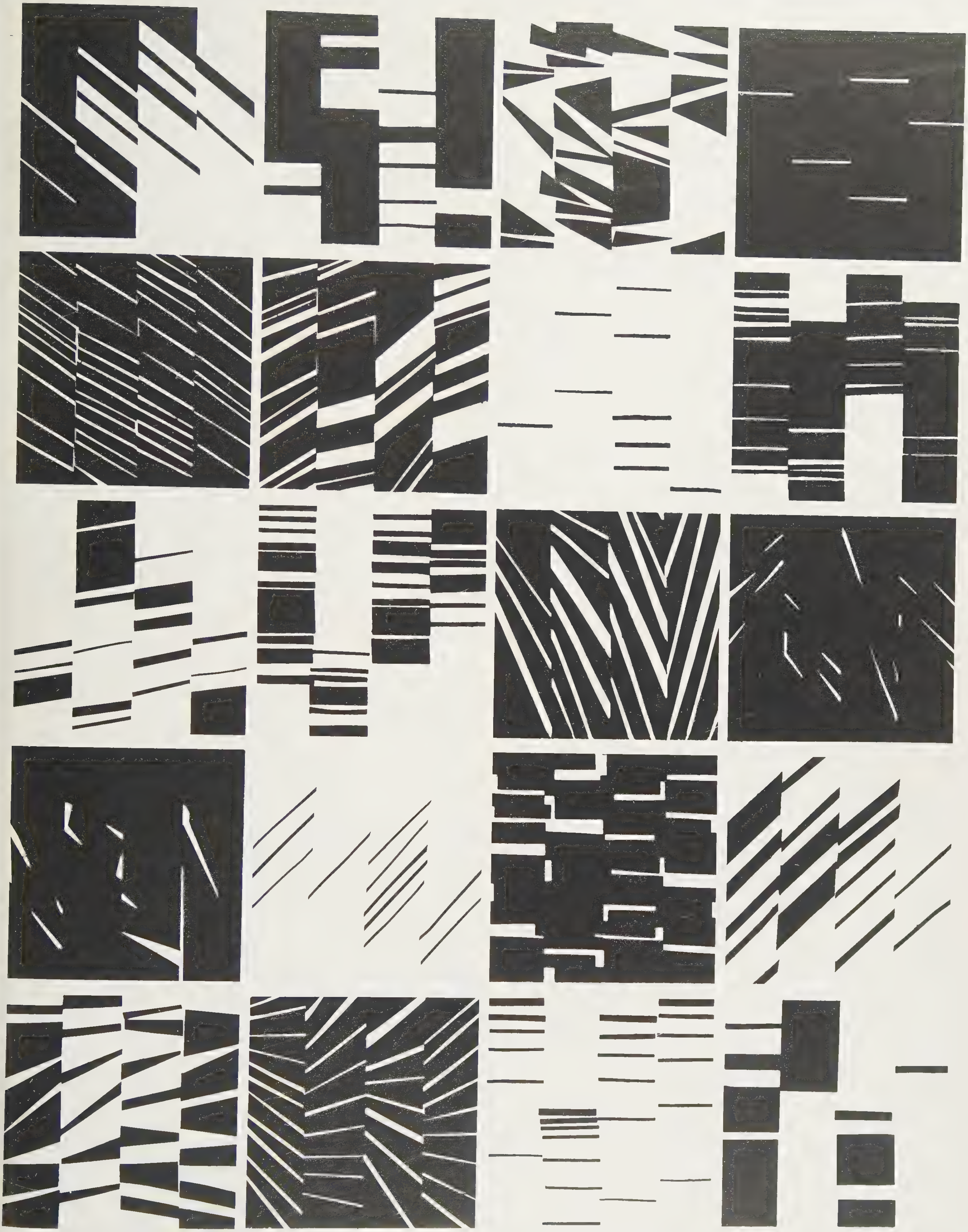
The photographs show the working environment.

The range of variations discovered in the first phase are developed in the second phase: the determined formal character remains clearly visible. The student attempts to derive as many different variations as possible (at least 30). The range of variations is expanded through comparing the work, each individual result may contain a new dimension for exploration. Mere visual adaptation or compliance with a purely intellectual system would be unsuccessful, as it would cover only unlimited self-contained possibilities of differentiation.

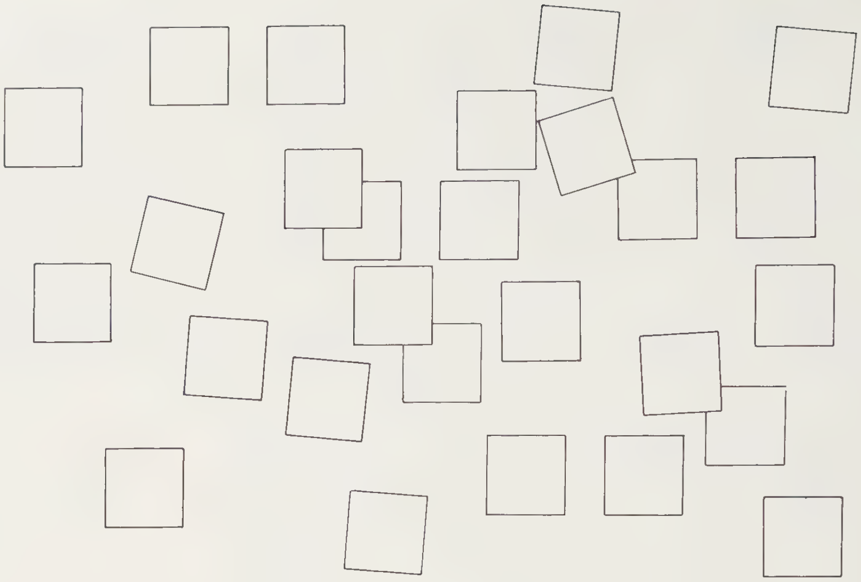
The examples on the right show the variations on the chosen theme depicted previously. Extreme situations are produced that are legible only in a relationship. In the first phase these are defined as unclear solutions: the fifth example in the second row can be read only as line intervals. In the second example on the third row progression seems to be the creative intention.



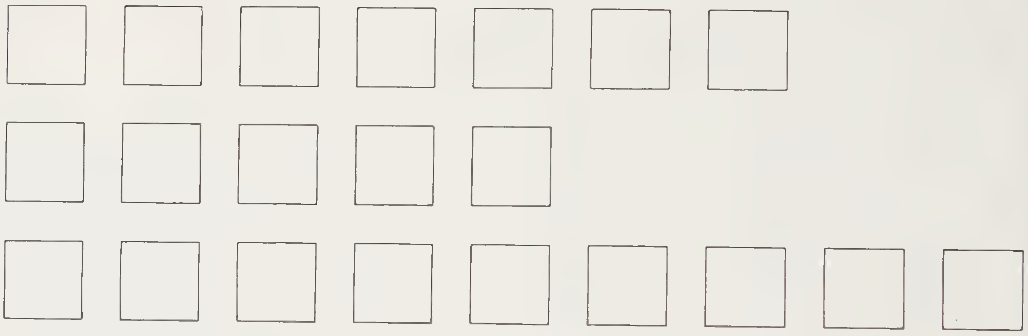




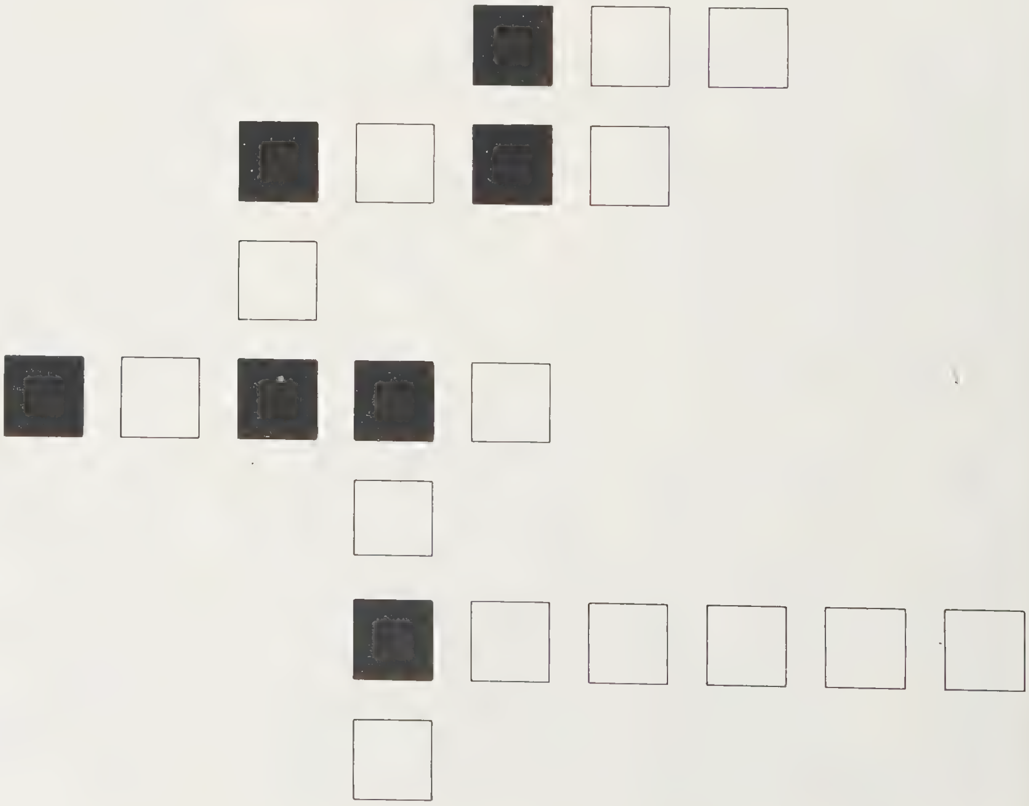
The third phase of the exercise consists in recognizing, defining, and ordering relationships among the individual variations with each other. The available pieces should be examined as equally important: subjective evaluations such as like or dislike are avoided. The examples developed freely, not systematically, resulting in overlapping and in interval differences (scheme 1). The student tries to analyze these differences as open distances or blank spaces and to indicate the missing pieces still to be supplied.



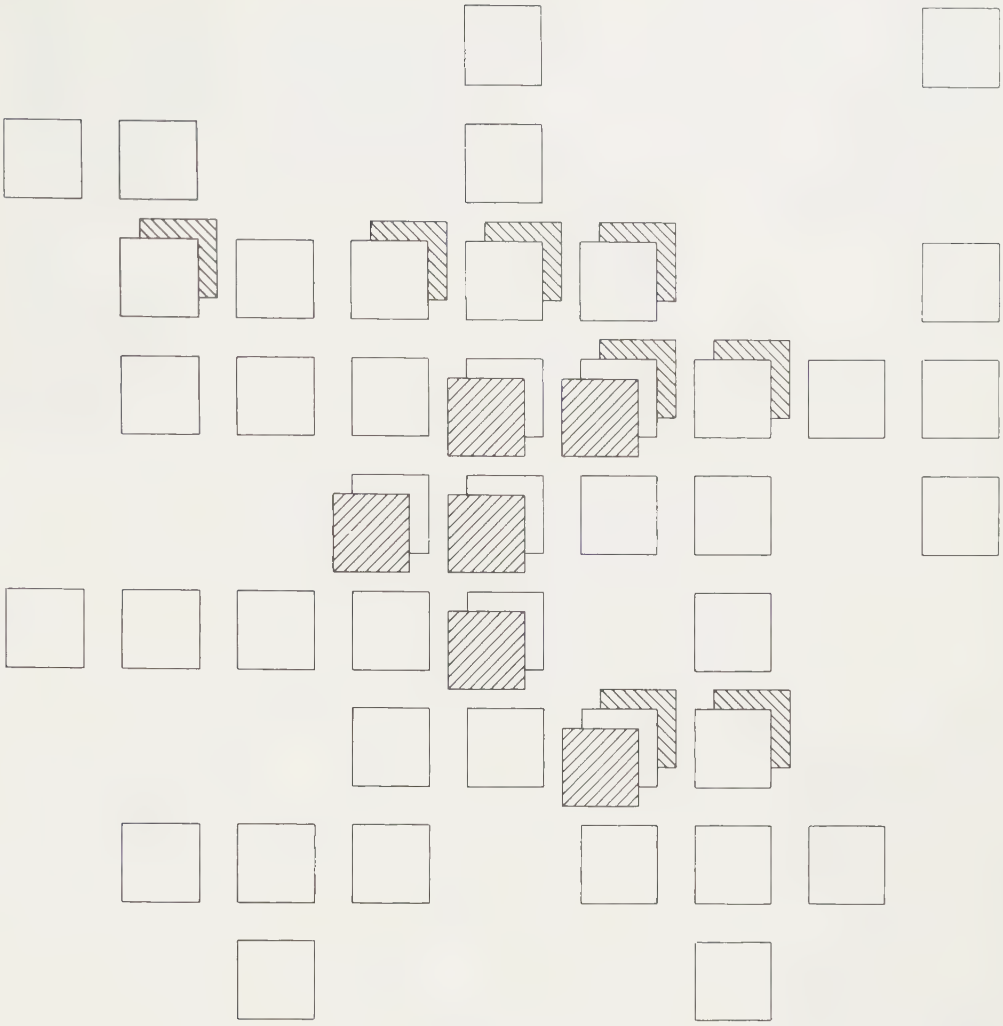
In laying out and comparing the pieces graphically different characteristics and relationships are defined in terms of criteria such as light-dark, static-dynamic, simple-complex, one-several, and few-many. The pieces that fall under a single criterion are arranged in linear sequences (scheme 2), which enables the student to understand the determining factors in his pieces, a prerequisite for further investigation. The groups, arranged according to suitable criteria, should be integrated into a readable horizontal-vertical structure (scheme 4). All criteria are considered equivalent.



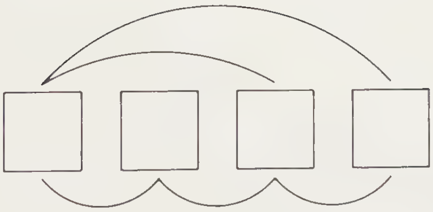
A chance arrangement of the pieces in a linear, branching structure would be a contradiction. The initial element determines the possible branchings in the sequel, which hold key positions in relation to the other pieces (the indicated black pieces, in scheme 3). The branching structure can be changed by selecting a different starting point: the relationships between part and part and part and whole are unequal in a given system and determined by the system chosen. The defined criteria are distributed only in the individual relationships between different linear branchings over the entire structure: dark pieces can stand next to light ones or in different places. The intervals from piece to piece and from branch to branch result from chance. The blank spaces are not related to all the pieces.



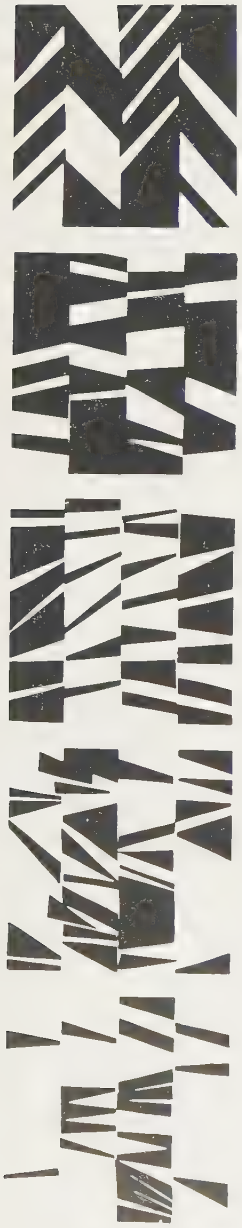
The defined criteria relate primarily to parallel horizontal or vertical relationships. Interrelating and overlapping combinations—for example, light-dark, one-several, few-many, or simple-complex, static-dynamic—must be coordinated. In many time-consuming trials the clearest organization of the relationships is created by comparing and moving the laid-out pieces. The first attempts are usually very undifferentiated, a frustrating situation for all participants similar to that of scheme 3. Possible connections and fine distinctions are eventually consciously perceived, and deficiencies in quality discovered. Each trial organization suggests further differentiations and is retained in sketch form for comparison. The dimensions of the organization are determined through the smallest interval, the difference between two pieces (at least in theory), and are open in every direction. Each individual piece intersects horizontally and vertically with the other pieces. The resulting open spaces between the intervals are also involved in this relationship and can be completed. Unclear or insufficient definition in the first phase of the exercise (derived from the limited number of original solution possibilities) results in variations that cannot be dimensionally related to all the components. This requires exploration on additional dimensionally relating planes (as the toned pieces in scheme 4).
The hypothesis is that all the pieces of the organizations can be assembled into an open, related, three-dimensional structure. Moreover, all the pieces have the same starting point and are subject to the same criteria.

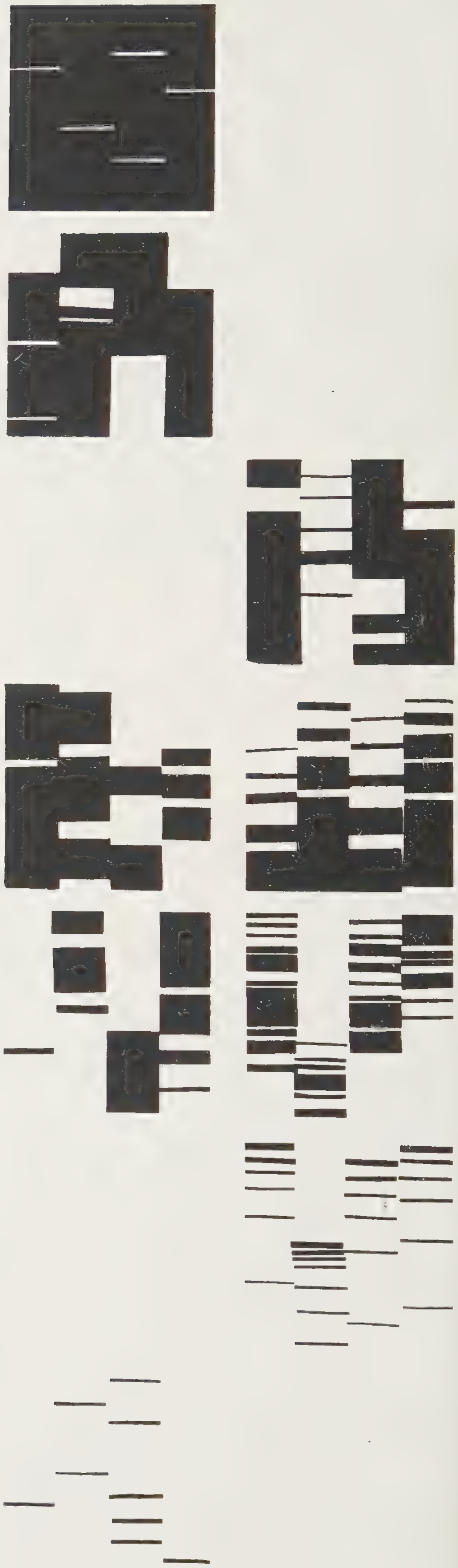


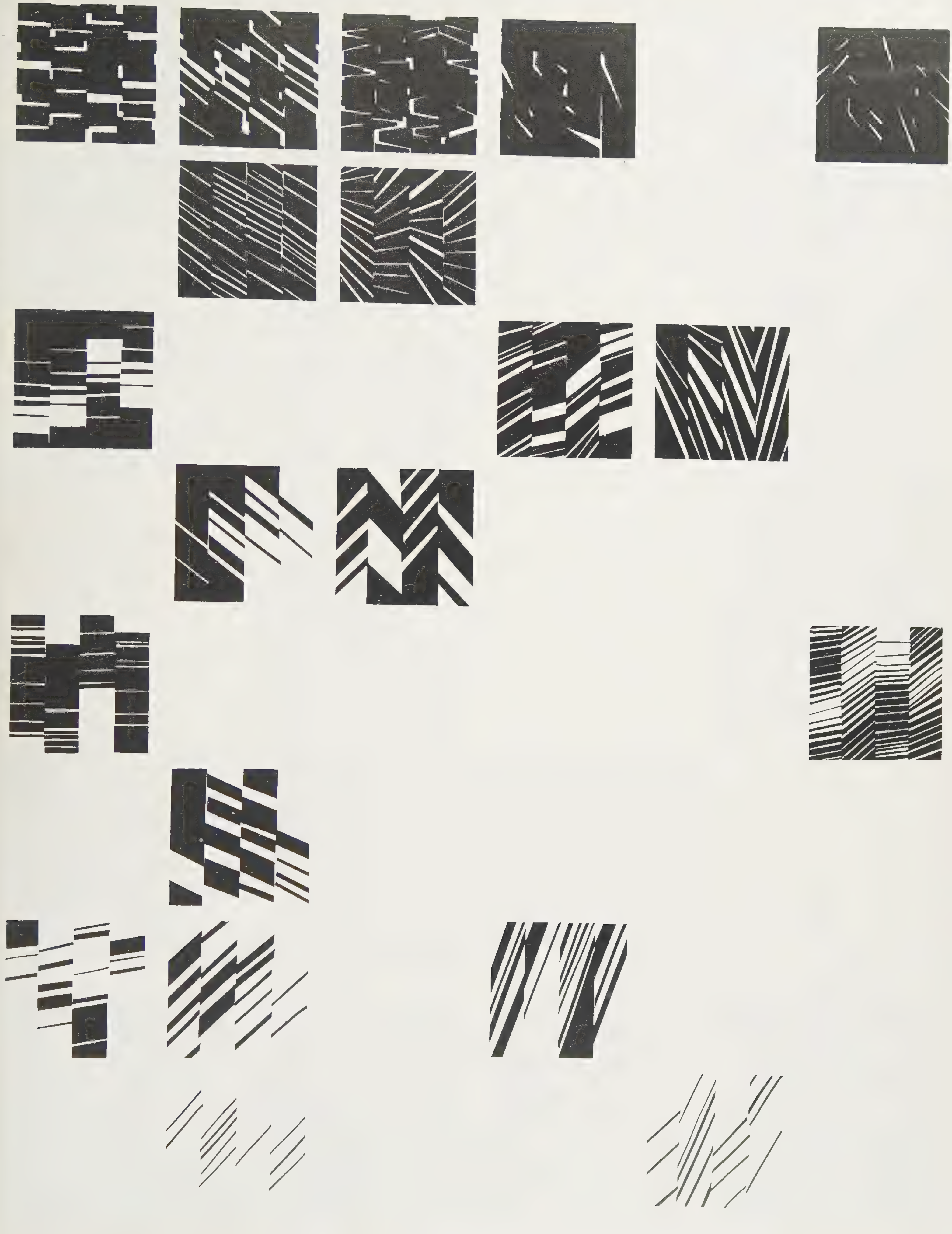
One horizontal or vertical row is selected from the organization, and completed in the total relationship. In the preceding stages purely formal, aesthetic, and rhythmical aspects are secondary: thus at this point the rows are relatively coarse and imperfect.
In the fourth phase of the exercise the intervals and relationships between the pieces are differentiated from one another, as are the details within the pieces and the pieces themselves, from a logical and qualitative point of view. Three pieces comprise the smallest unit for which interval size and detail relationships can be determined (scheme 5): for example, piece 1 is to piece 2 as piece 2 is to piece 3 and to the totality. The resulting number of pieces and the actual criterion are retained. Imperfections may not be reduced adding pieces (quantity): quality must be achieved by relating the existing pieces to each other and to the whole. Allowed changes are made one at a time for a complete row and compared with the original row. In this context many rows with different characteristics can be produced.



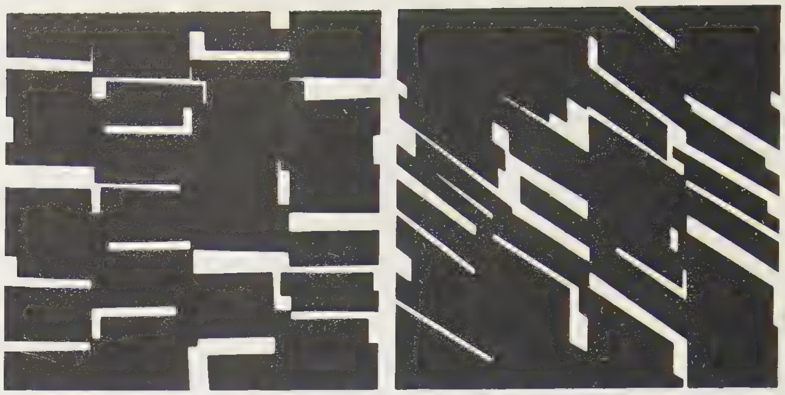
This illustration shows the organization and its variations for the example discussed previously. The pieces are coordinated with each other in terms of these criteria: from top to bottom, dark-light; from left to right, static-dynamic, few-many, simple-complex, and flat-oblique. There are imperfections in some of the relationships: for example, the contrast one-many proceeds in a vertical as well as a horizontal direction. Likewise, the differentiation of the light-dark and the flat-oblique relationships could be more clear. Since two essentially different criteria were selected as the theme for variation, some pieces cannot be included directly in the organization (those in the uppermost row and the four pieces separated below on the left). The design process is different for both examples: above, cuts in a different direction and shifts of formal elements; left, unparallel cuts in different directions and partial removal of formal elements. These pieces should be coordinated in their respective contextual relationships with the organization of the pieces on other levels. The first piece to the left, which is within the organization, is used as a coordination guide. The above row would partially overlap the dark elements; it is selected for further differentiation.

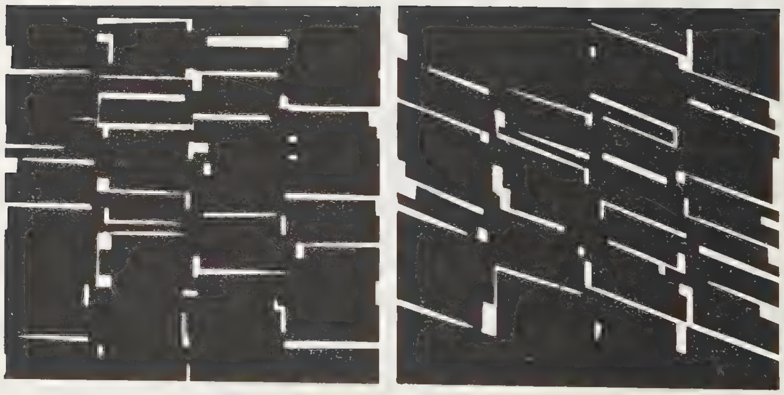




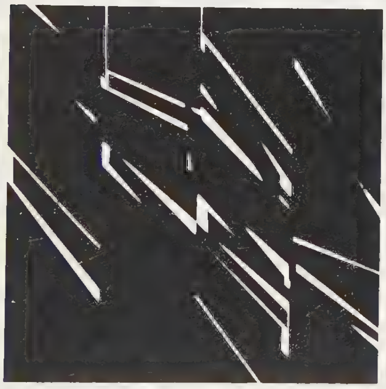


The fourth phase of the exercise is documented with the selected row of the previous example. The sequence of the pieces in the organization is represented above. The pieces are unequal in darkness and irregular in number, formal progression, and angle. The student tried to adjust deficiencies of quality and interval purely through spontaneous intuition: the realized row is represented below. The pieces are approximately equal in darkness; the angle changes and the formal progressions are relatively uniform. The number of elements in the individual strips is unequal and does not relate progressively. The sixth piece in the row apparently could not be resolved.

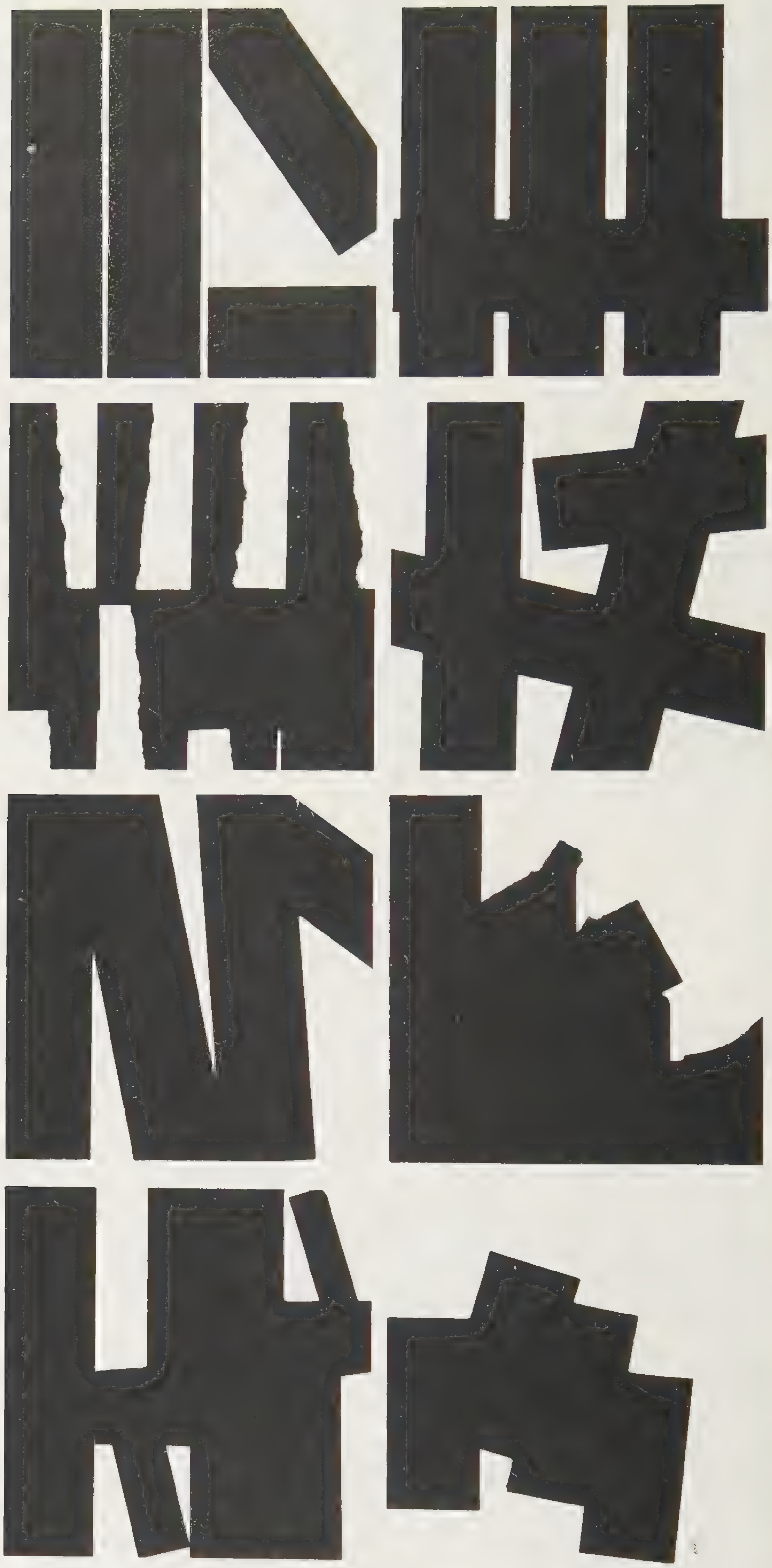




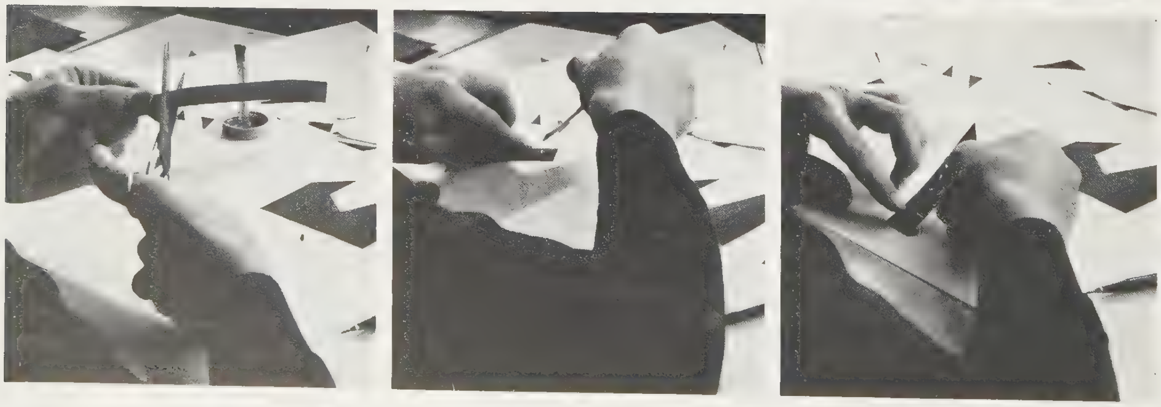
The photographs show the teacher's blackboard explanation of how to organize the relationship structure and the students comparing working methods.

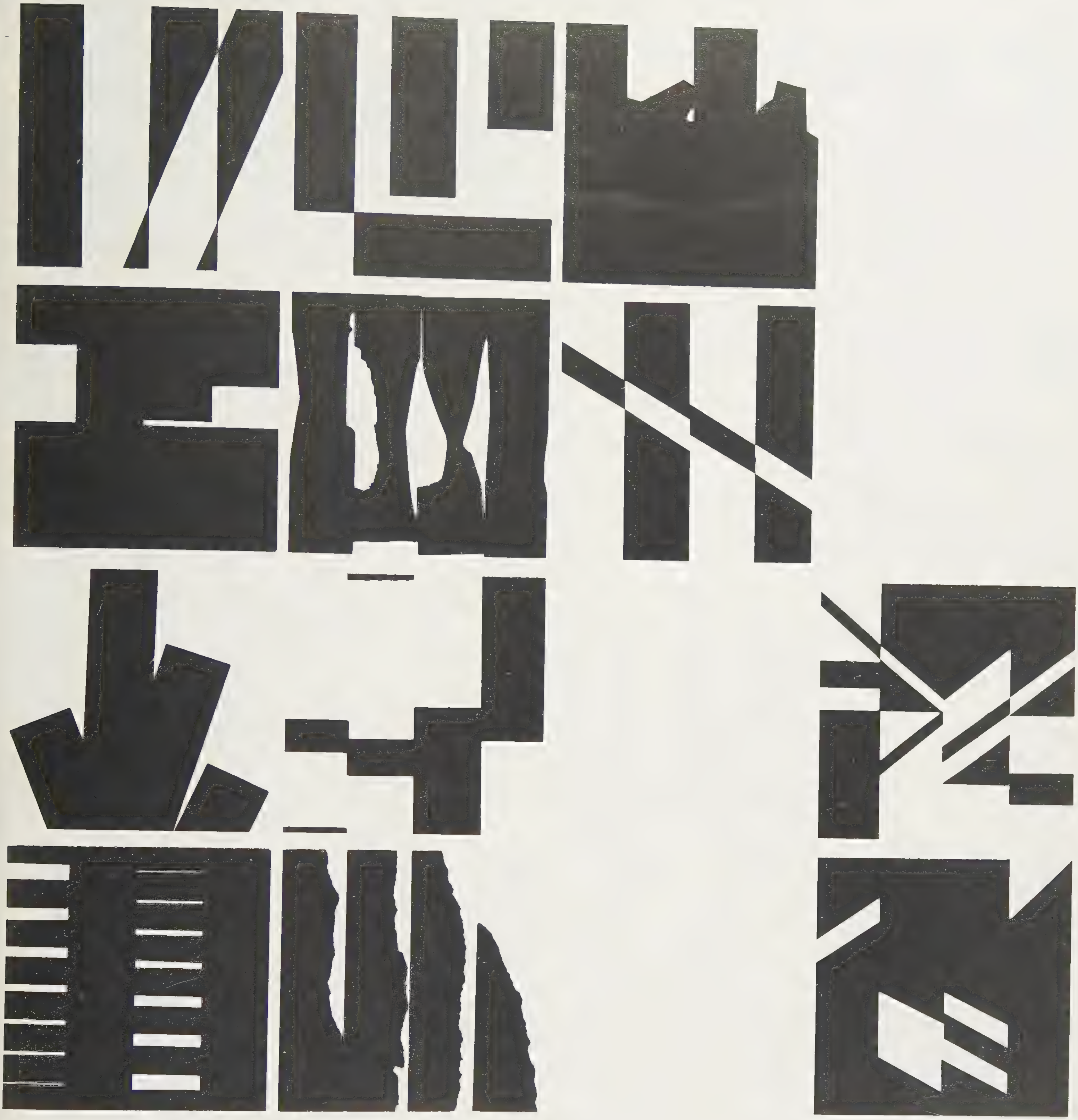


The following solution possibilities, developed by another student, exhibit a different method than that of the student discussed earlier. For example, different combinations of tearing, folding, and flipping are found. The first, third, and fourth examples in the above row do not exhibit a clear concept and are essentially compositions of different opposing strip elements. In both examples on the far right the formal model chosen for variations is the oblique cutting and removal of the resulting elements.

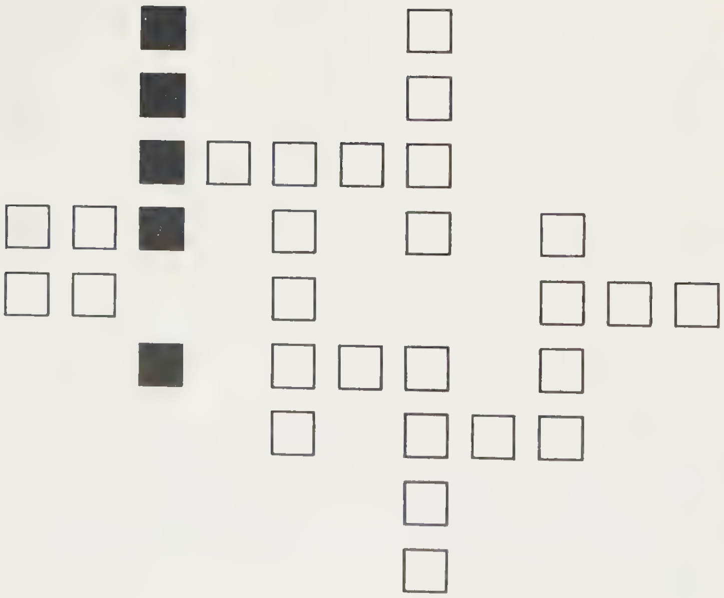


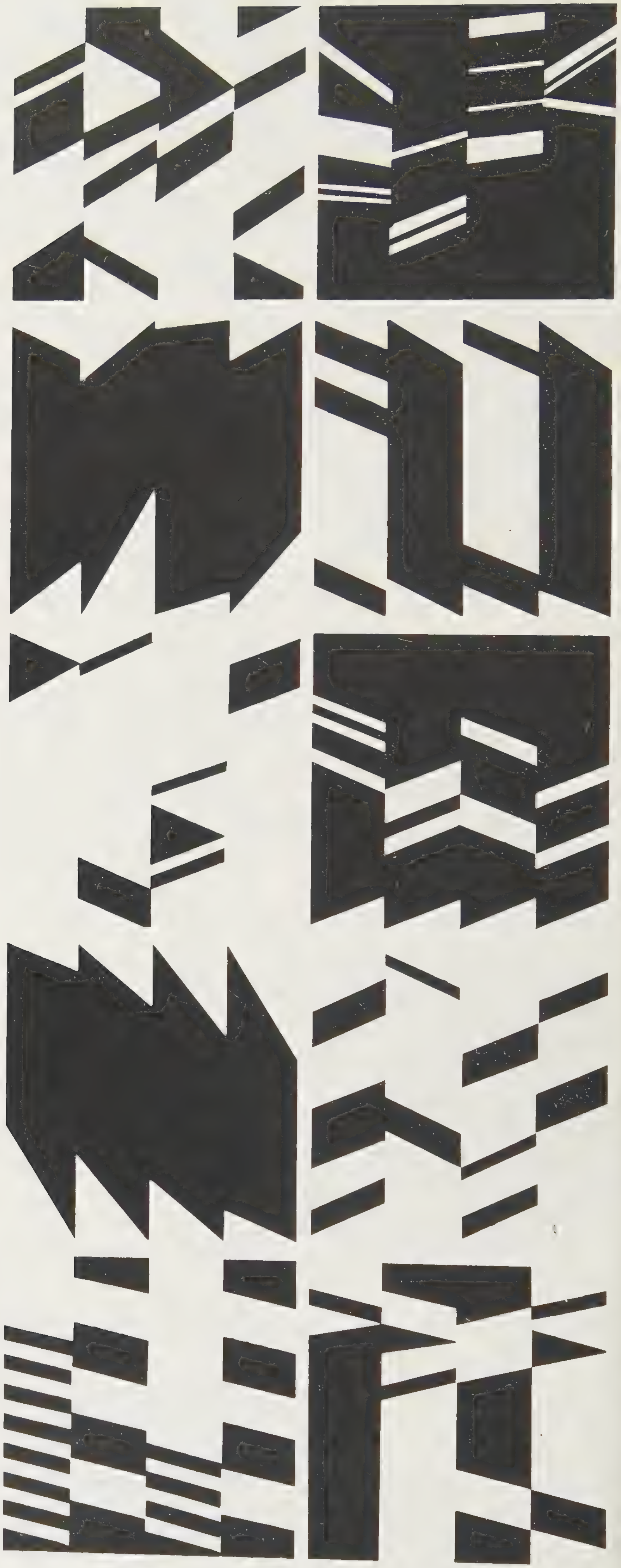
In these three photographs the working technique is obvious, as is the student's neatness of execution.

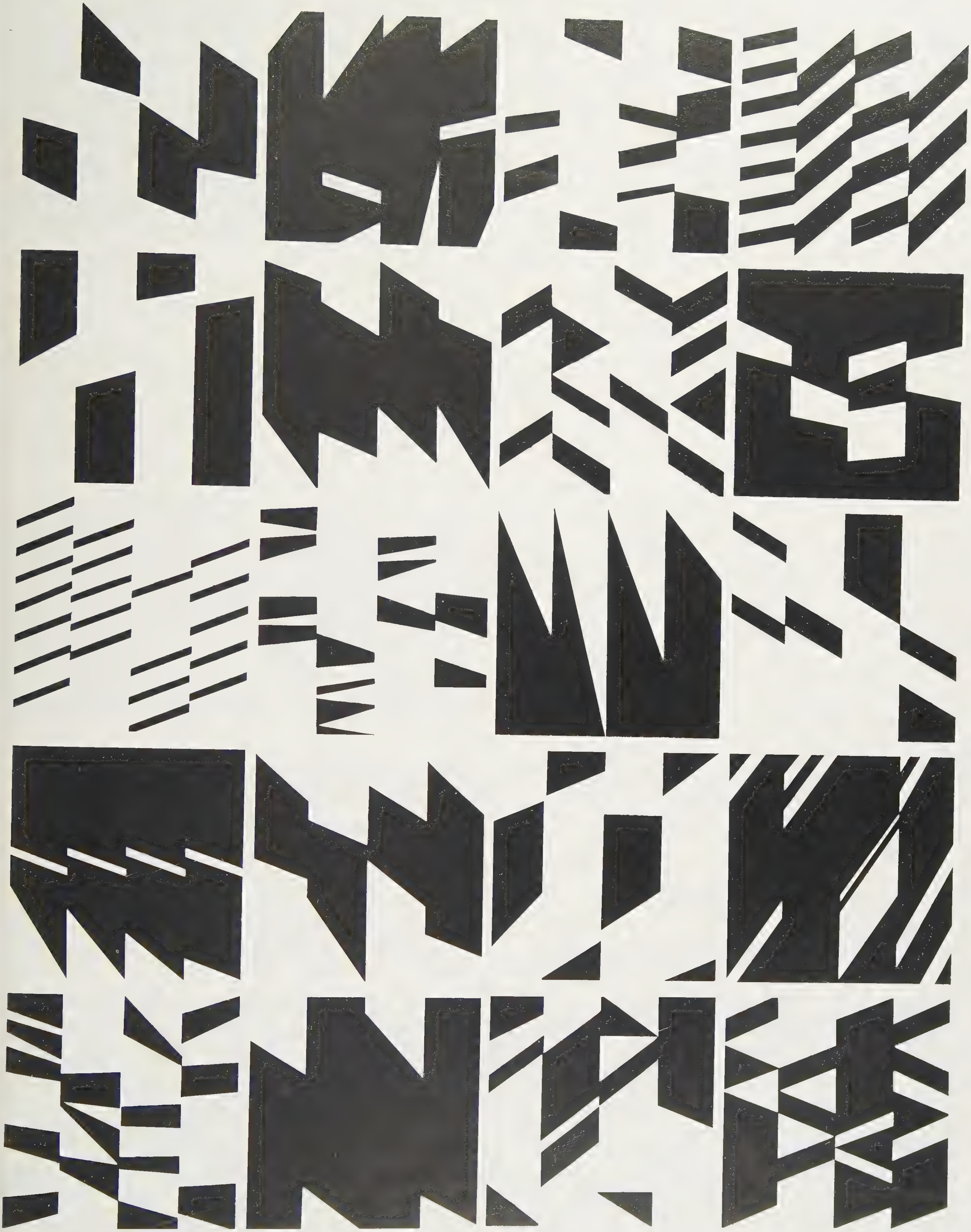




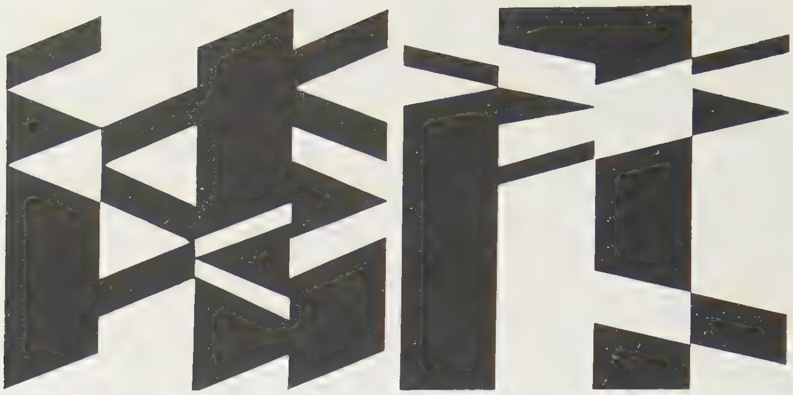
These variations contain elements that do not correspond to the exact definition of the theme: for example, the fifth example in the third row utilizes simple diagonal cuts, while all the variations as the first example in the second row utilize double oblique cuts. Both methods are possible but incompatible solutions to a larger differentiation of the first phase of the exercise. The scheme below shows the organization of these pieces and the position of the row selected for completion.

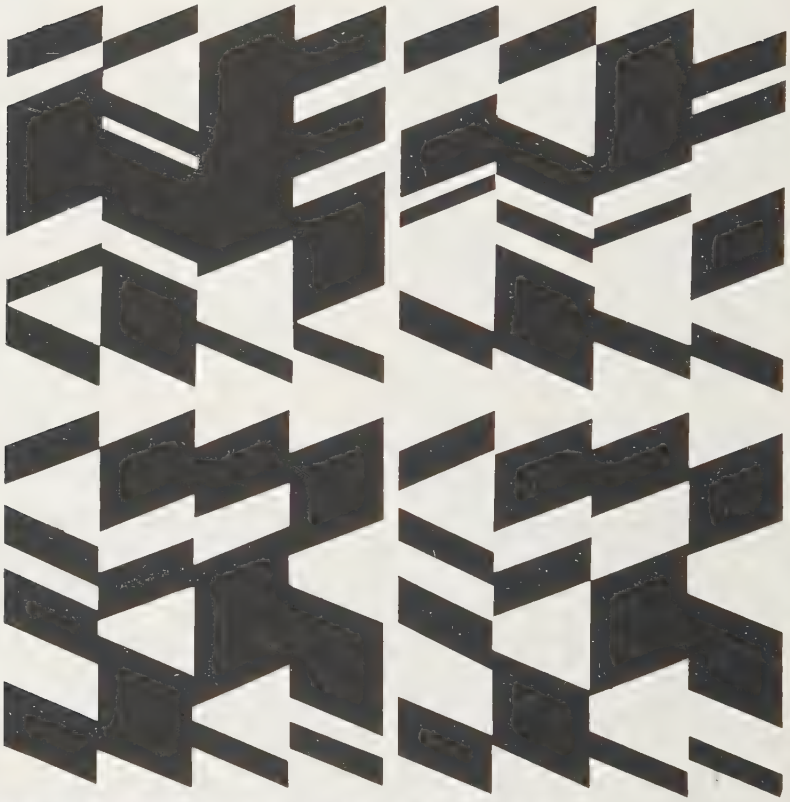




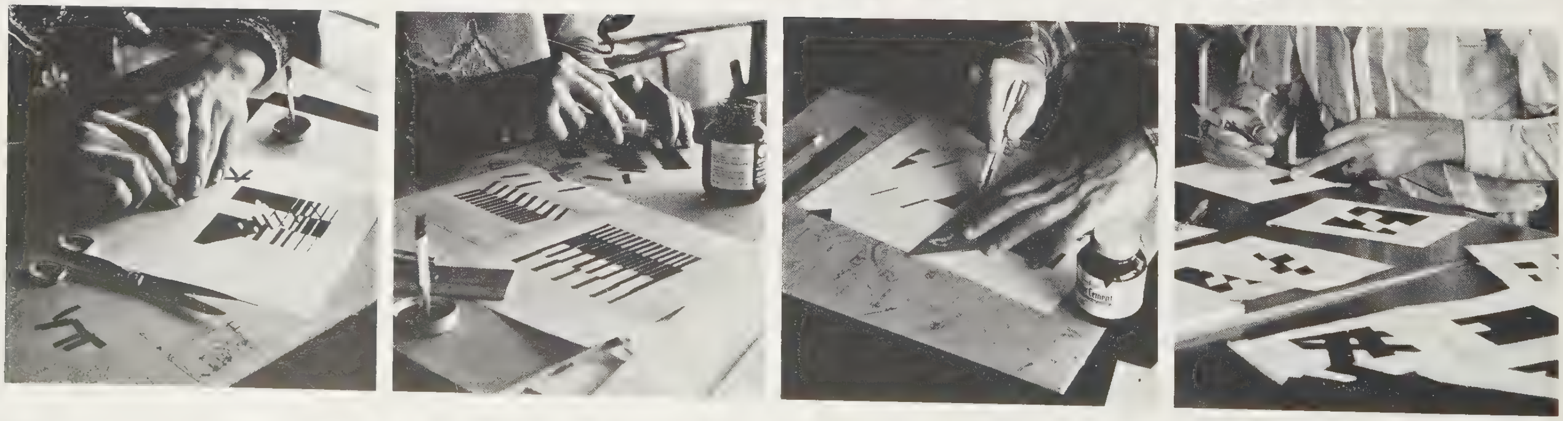


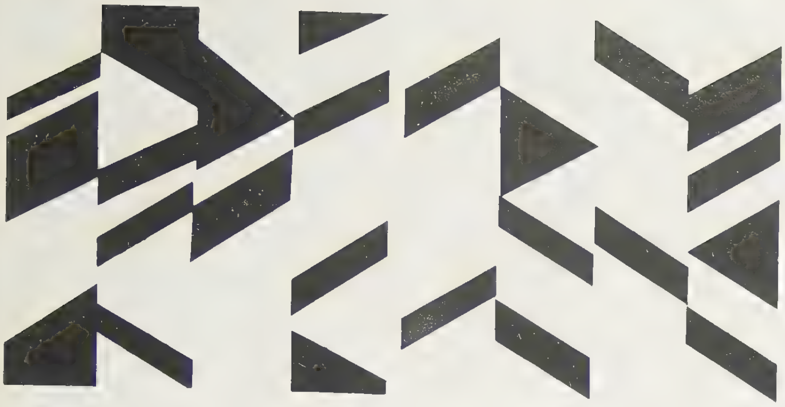
In the row shown above the interval of the light-dark progression of the parts is approximately balanced in the totality. The light-dark relationship and the number and type of single formal elements are not contextually related to one another. In this respect the middle row appears optically balanced, but the details in the individual pieces do not progress continuously. In the row below each formal element of each individual stripe in each piece is related clearly, resulting in a minimal change in the light-dark relationship between the parts of the row as a whole. The differentiation process for the fourth phase is clearer than that produced by the first student.

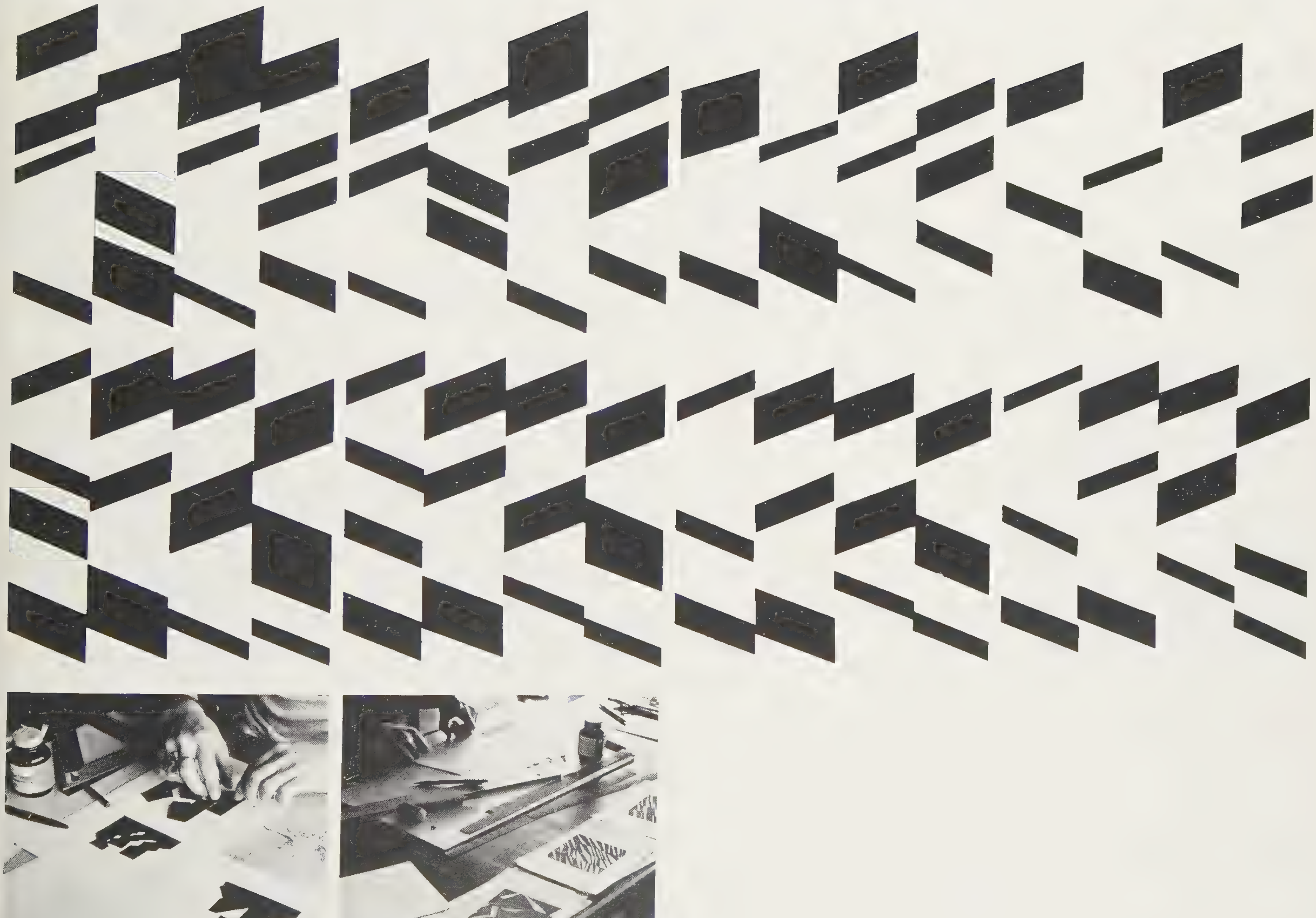


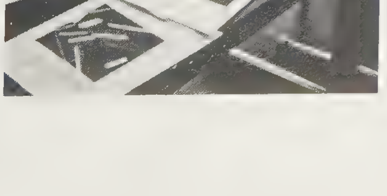


The photographs show different working areas and comparable methods of differentiating parts of rows.

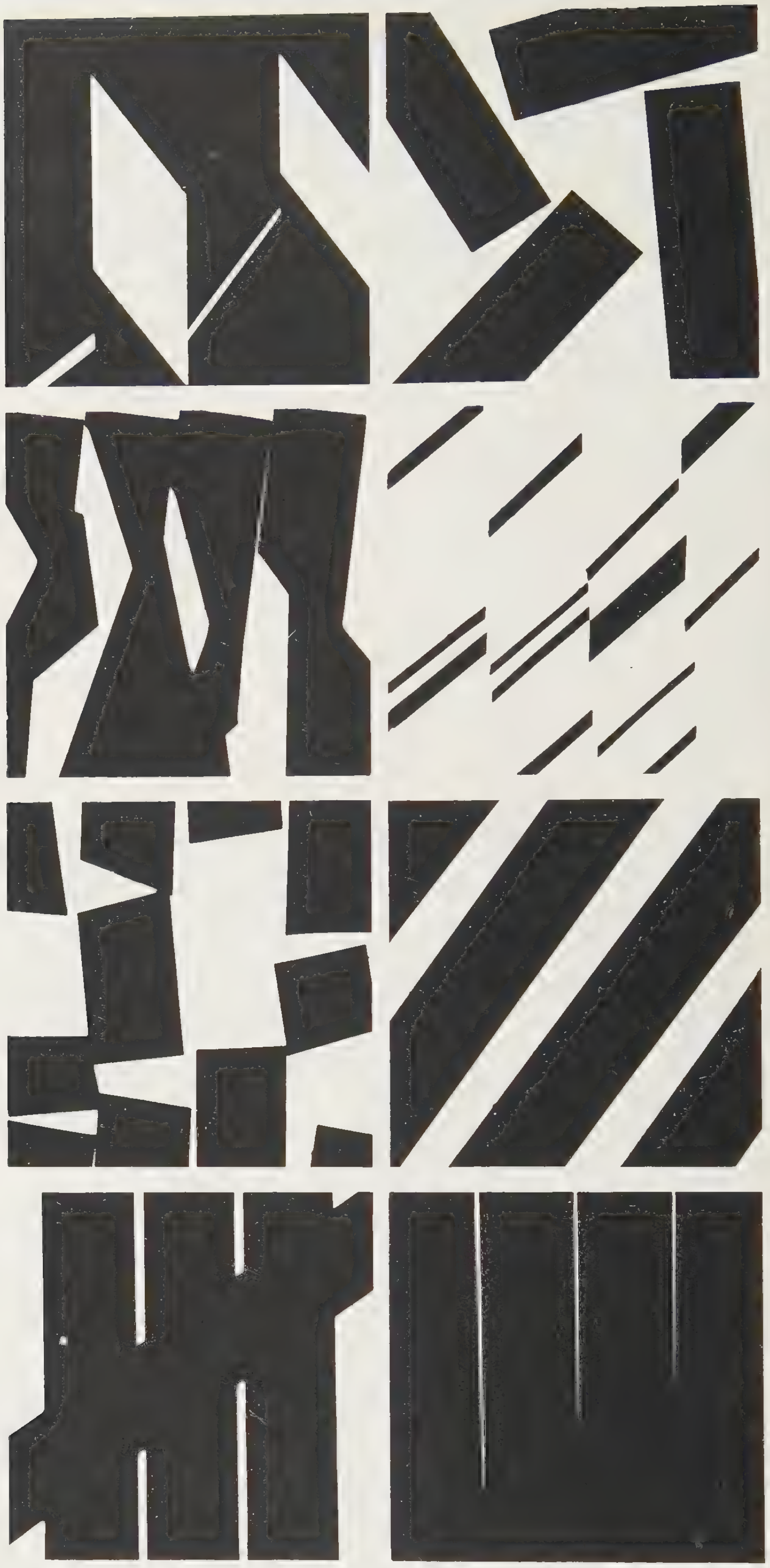


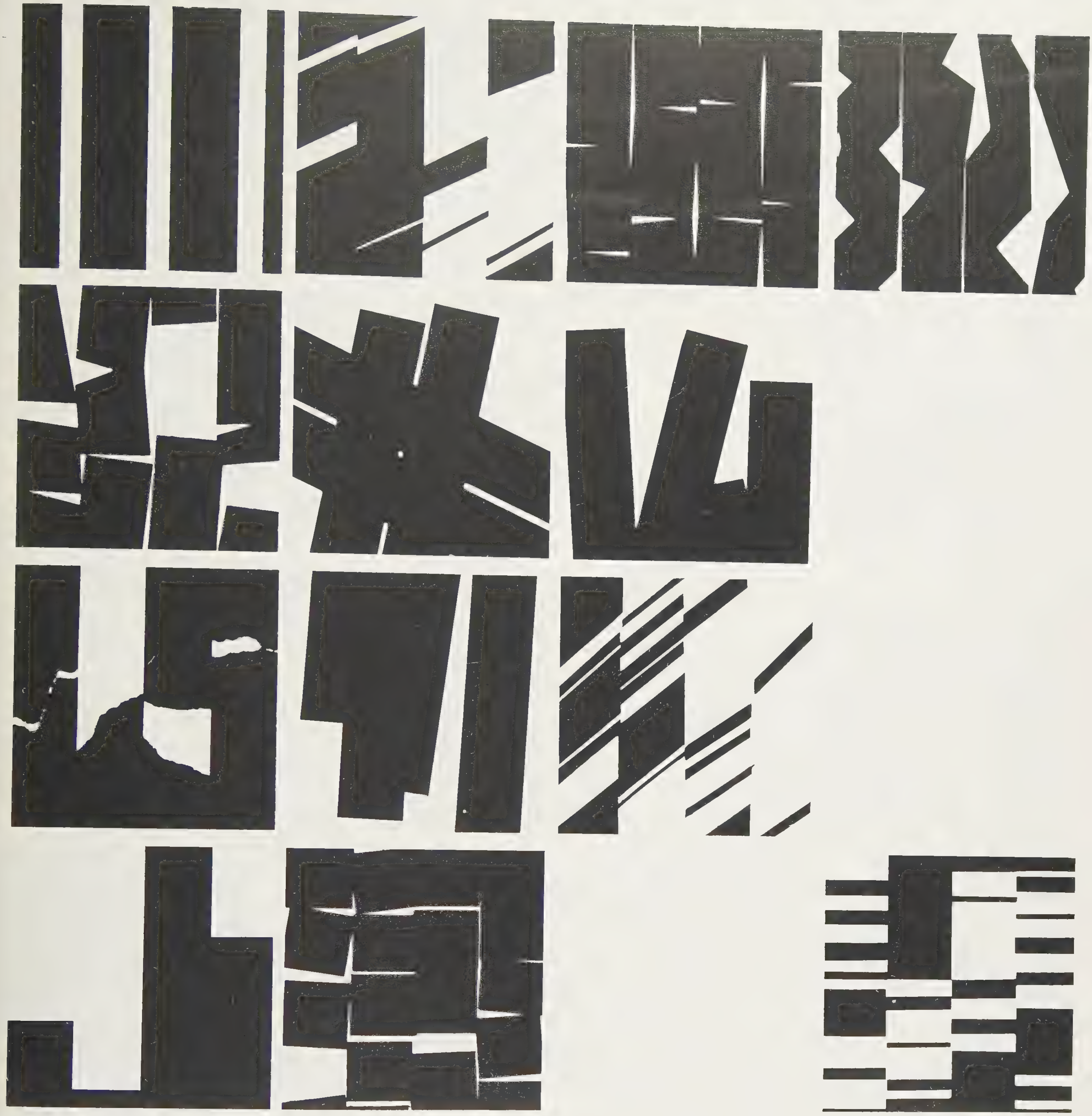




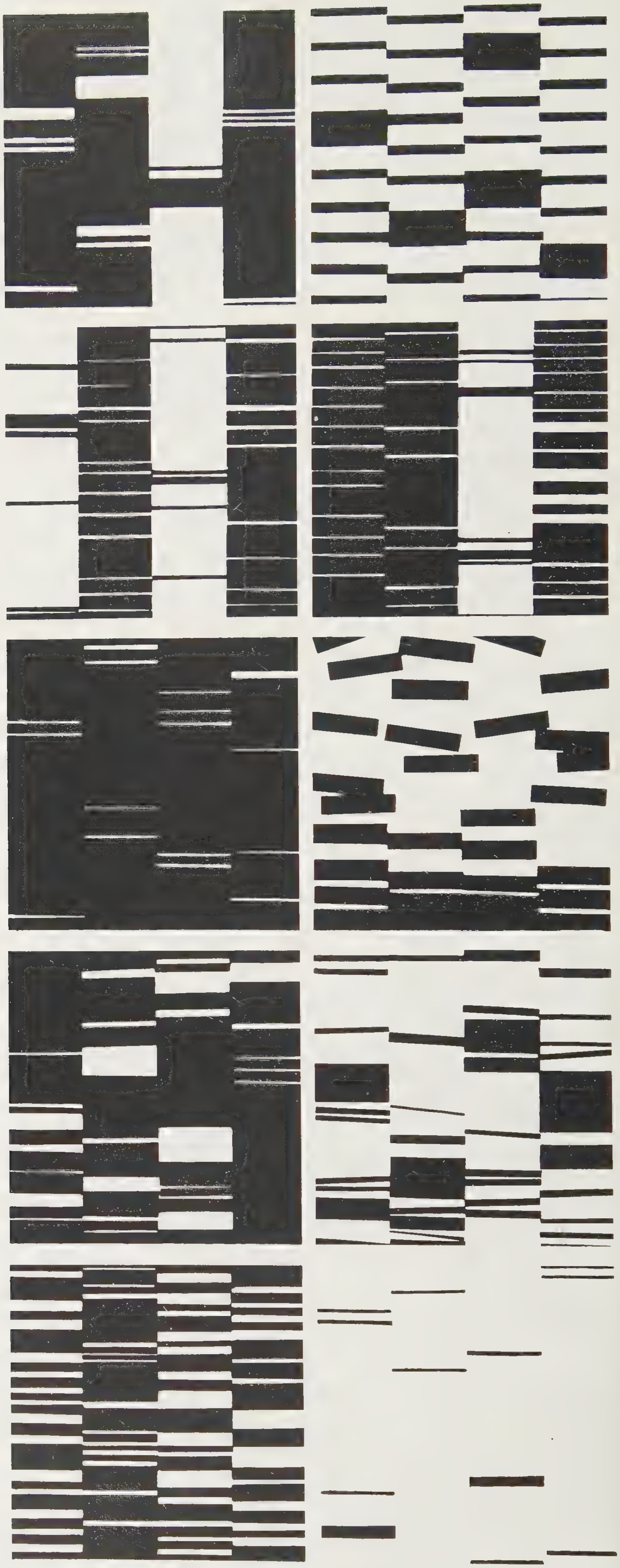


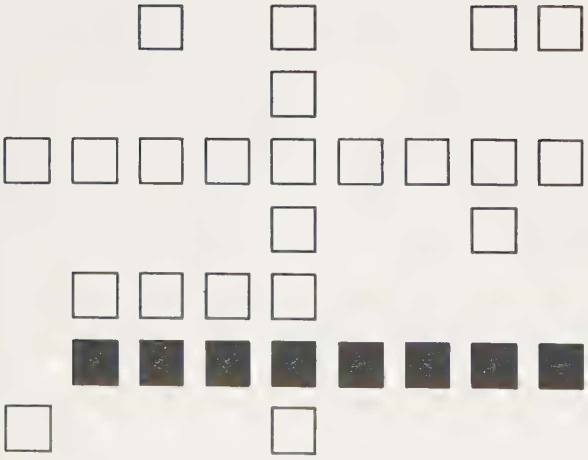
These examples show the possible solutions produced by a third student for the first phase of the exercise. The cut triangles in the sixth example in the above row and in the first in the second row are produced by folding. The creative concept of the fourth and fifth examples in the above row is varied a few times. The theme for variation, represented below right, is unequivocal. The removal of many horizontally cut parts produces the formal element.

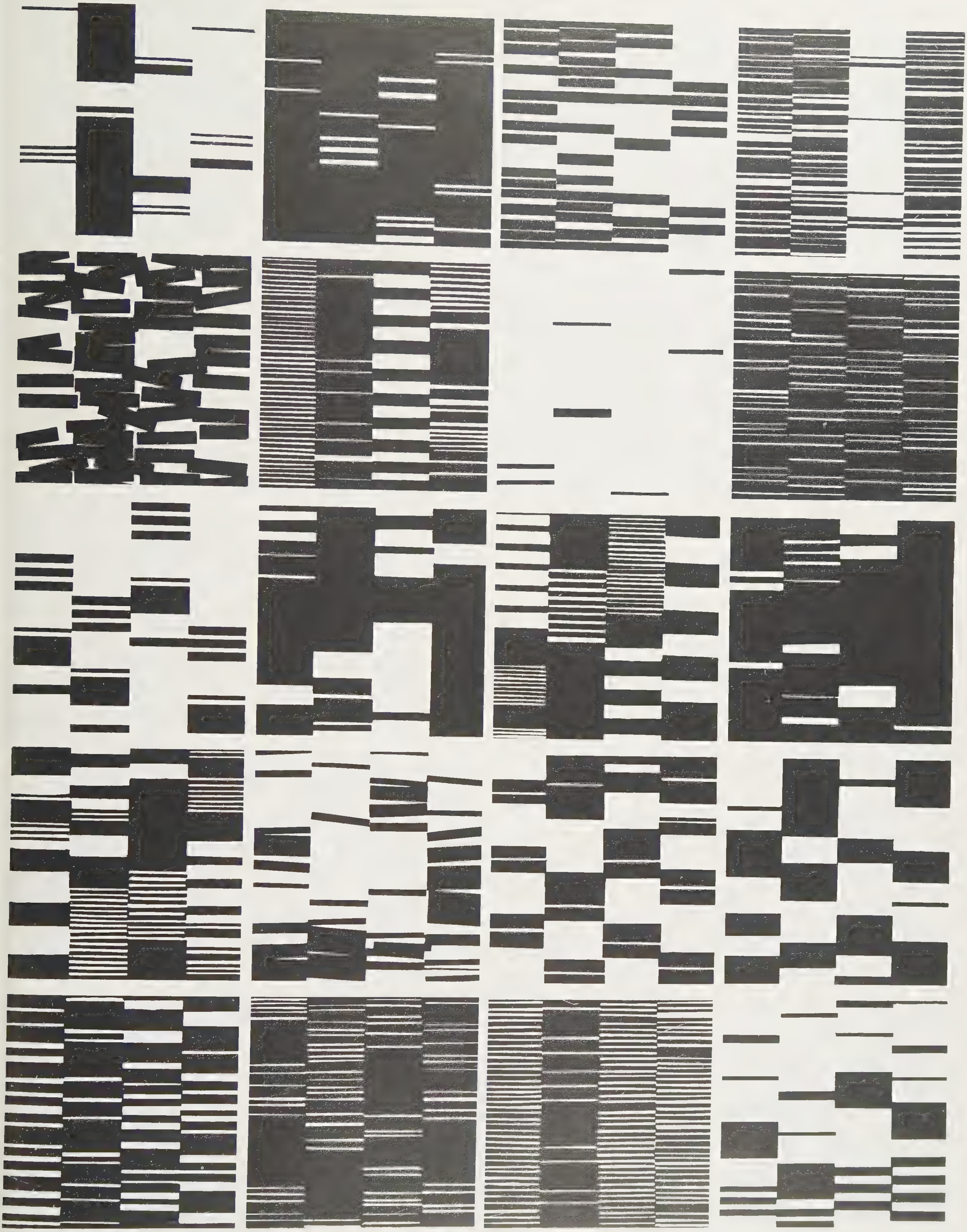


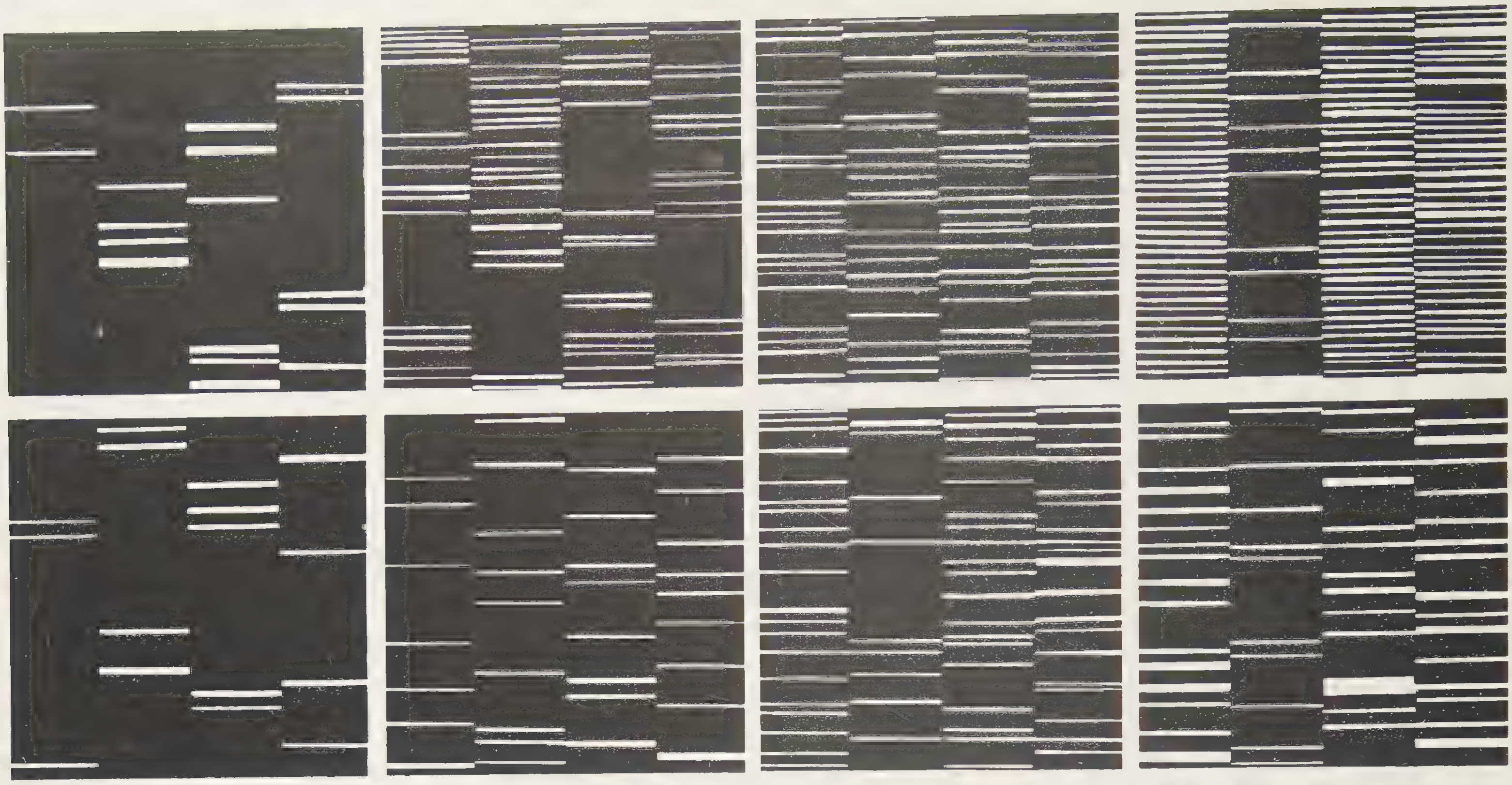


As with the second student's variations for the second phase of the exercise, some pieces of the third student's do not correspond to the selected theme: all pieces with shifted, obliquely placed formal elements are variations of another possible solution. All the examples are subtly varied rhythmically: below is shown the corresponding scheme and the position of the selected row for the fourth phase of the exercise.

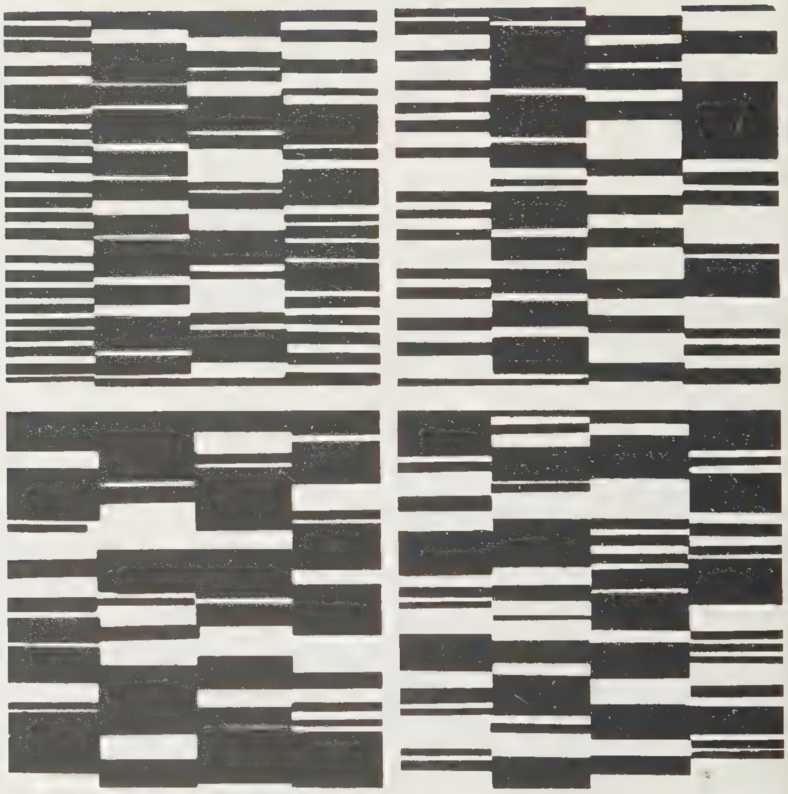


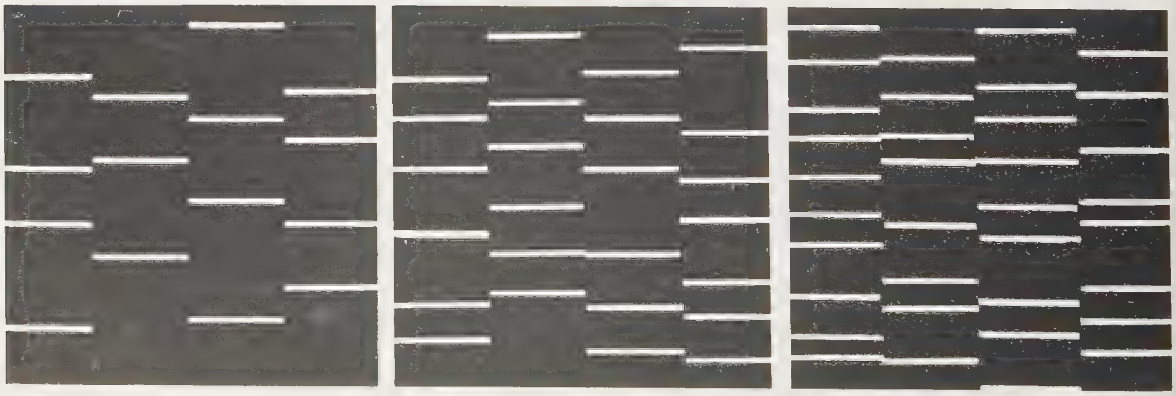


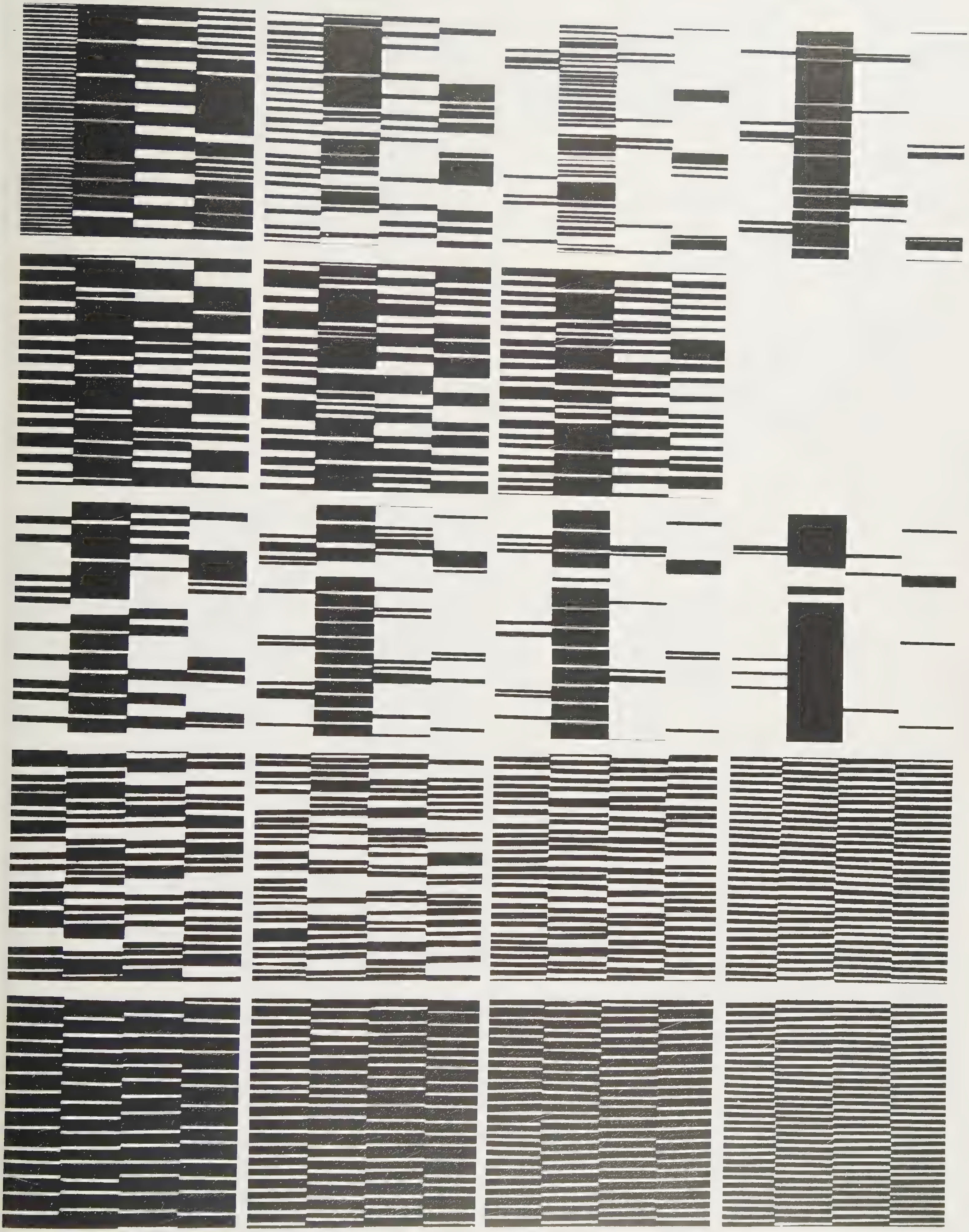




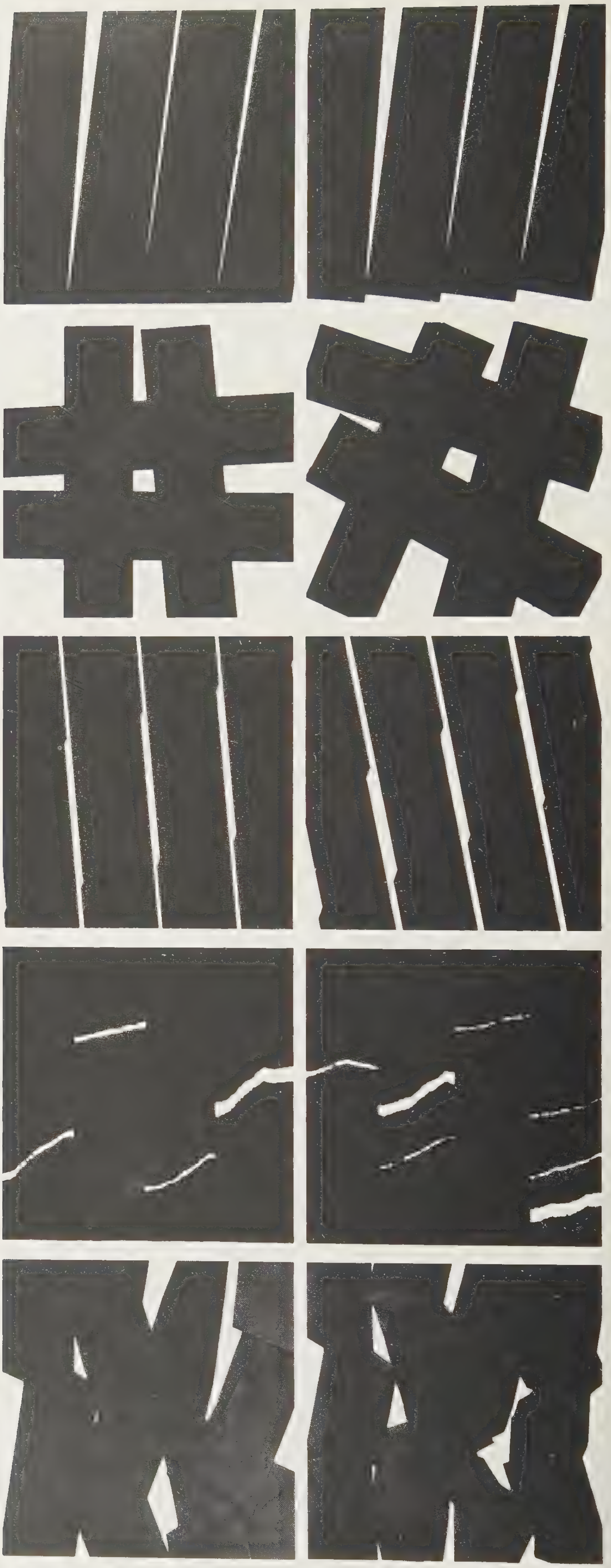
The third student's selected row for the fourth phase of the exercise is represented again above. In comparison to the initial rows selected by the other two students, it exhibits complex contrasting, rhythmical relationships within each piece, from piece to piece, and between the piece and the whole. An analysis of these complex relationships forms the starting point for a differentiation process with many possible rows. These rows relate to one another and to the original row as the model and are represented in their derived sequence. In the second row the contrast effect in the second strip is intensified by the increasing rhythmically neutral formation of the remaining strips. In the third row the contrast of the growing rhythmically equal formation is reduced by increasing the number and density of the formal element. In the fourth row the formal elements are assimilated into the rhythmically equal formation in approximately the same degree of lightness. In the fifth row the light-dark relationships are graduated throughout the formation with the same formal elements.

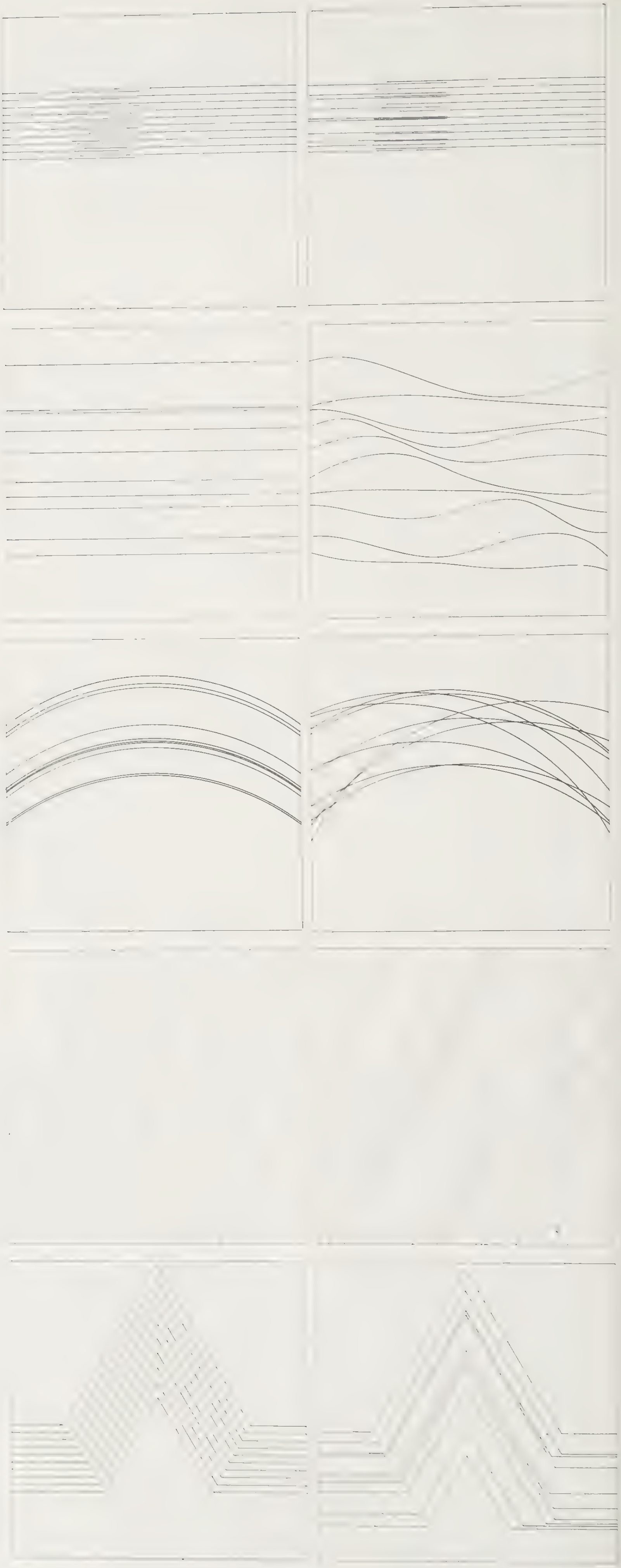






The examples and methods of the three students for the differentiation process of the fourth phase vary corresponding to their individual abilities. The rows on the right, developed through formally different processes, suggest the latitude of graphic forms that can be generated through differentiation of the exercise model. The different intensities and complexities of relationship (both of intervals among details and of the pieces as a whole) exhibited in these rows are determined by the actual creative concept, the definition of criteria, and their relationship in the organization. The consequent dependence of creative decisions in context to these factors becomes clear to the student through such examples. The unworked areas can be comprehended through analogous references.
The constant differentiation process exhibited in questioning and comparing examples, defining criteria of the manual-visual working process, recognizing relationships, and coordinating and referring to all factors within comprehensive, elementary prerequisites sensitizes the creative imagination, awareness of complex visual-conceptual design processes of communication, for fundamental thinking and planning in large relationships.

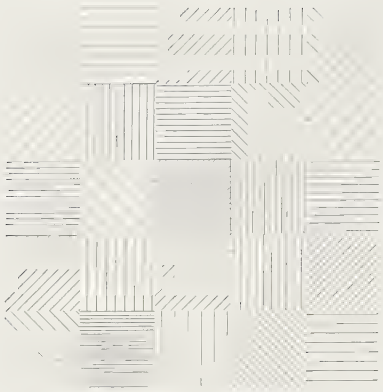


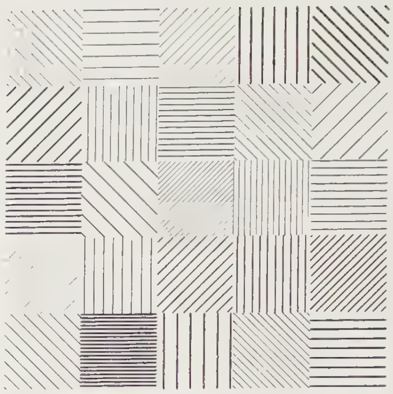


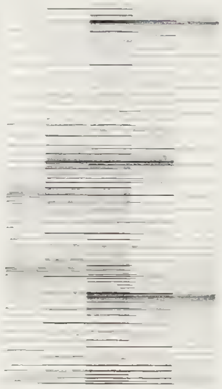
The experience and knowledge gained from the preceding model exercise is applied to the following exercise in a different medium and technique. The starting point is a square format and ten lines of the same thickness separated by predetermined regular intervals. At first the group of lines is composed horizontally to form a gray value inside the format. Beginning with this situation, rows of five or more pieces are developed in a continuous progression of creative and formal relationships. The design and differentiation processes, previously structured in single phases, now proceed in a parallel fashion: that is, in mutually simultaneous relationships. Designing with ruling pen, ink, T-square, and angles requires technical skill, discipline, and concentration in order to achieve a clear, neat representation. Any creative or manual insecurity has an immediate effect in the representation: one a line is drawn on the paper, it cannot be shifted. A change or correction can be made only by repeating the work.

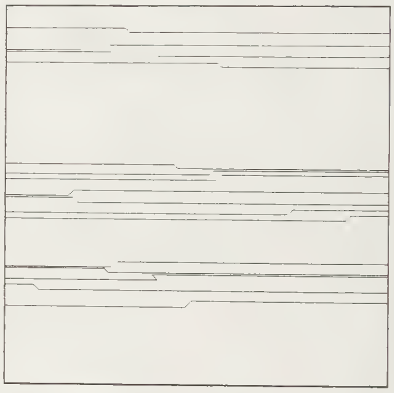
The rows on the right show many-leveled designs and working processes of five students. The group of lines organized in the square, above, is the beginning point for the second row.

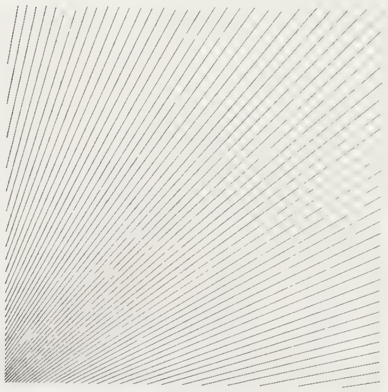
Further differentiation of experiences and knowledge results from applying the preceding design techniques and media to different conditions. In the following rows the results of alternative exercises by different students, suggest the abundant range of possibilities.
The examples on the last page suggest graphic translations of these creative processes into other media: typography, dimensionality, and materials.

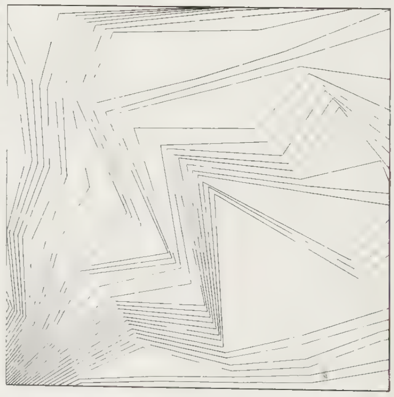


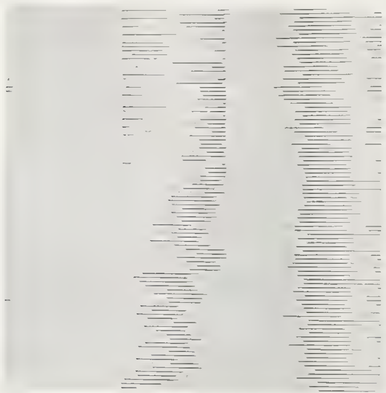


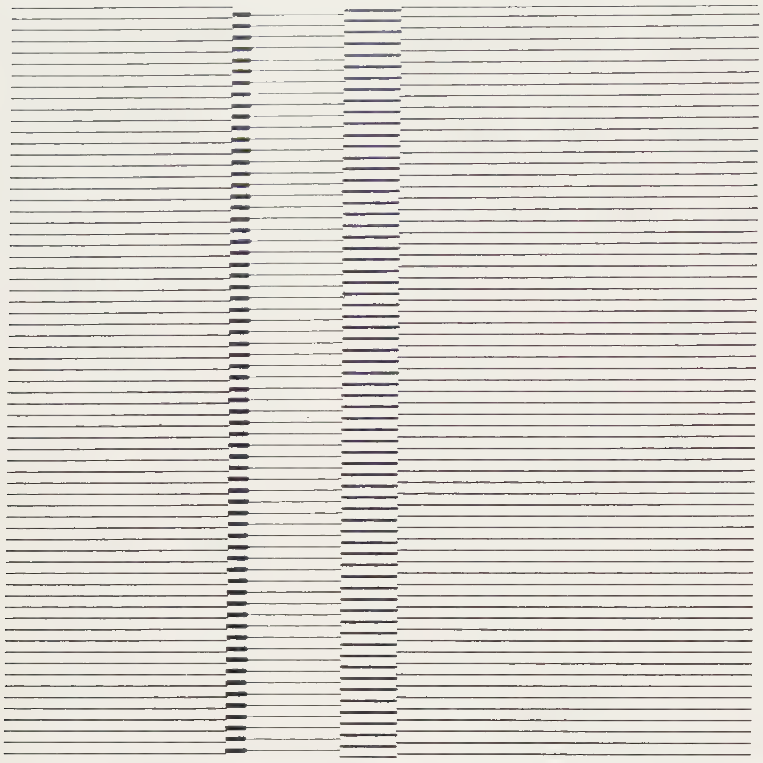


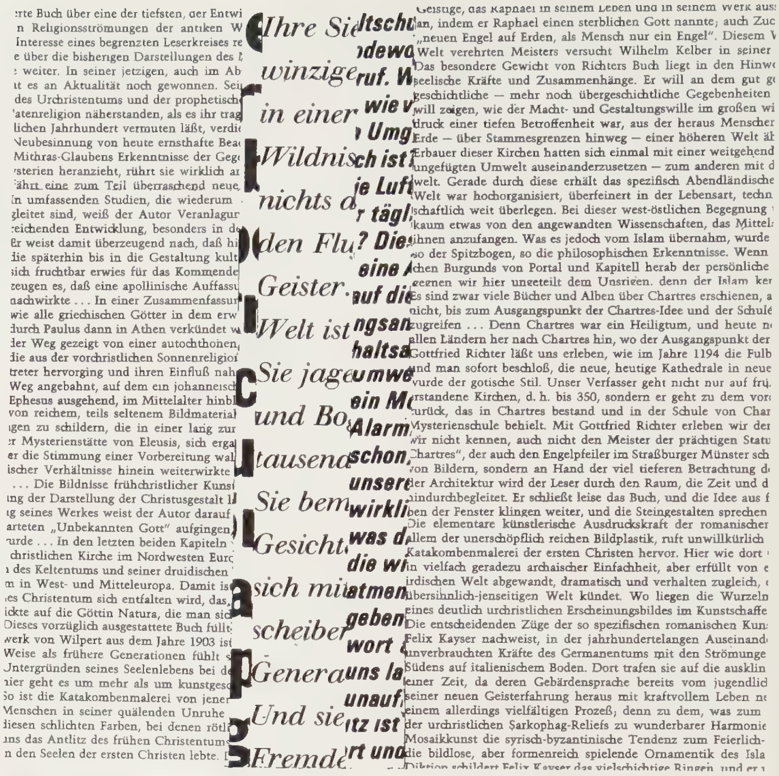


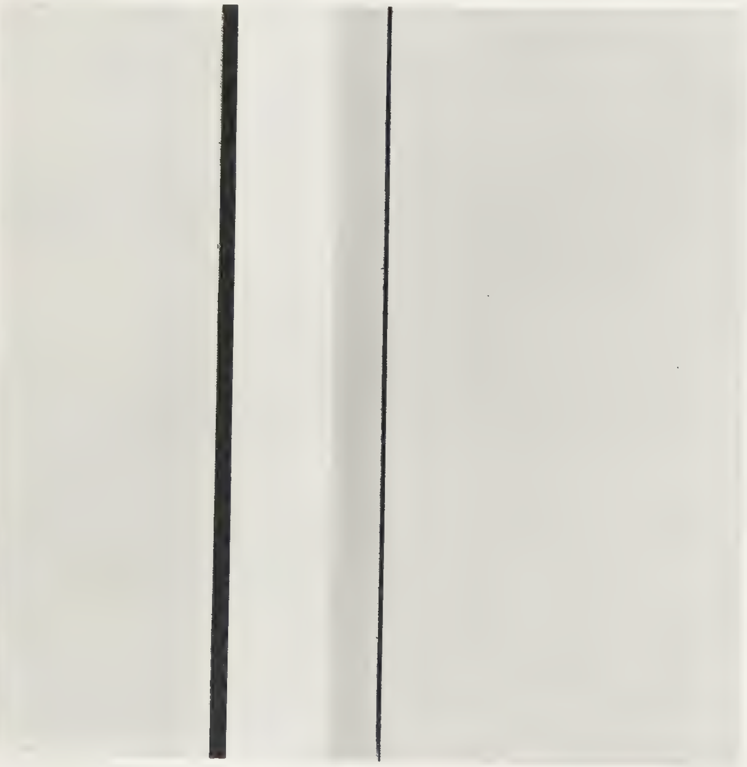












Consciousness of three-dimensionality is weakened by daily confrontation with the environment. The goals of this course are to perceive, discover and experience dimensional objects, forms, structures, and abstractions.

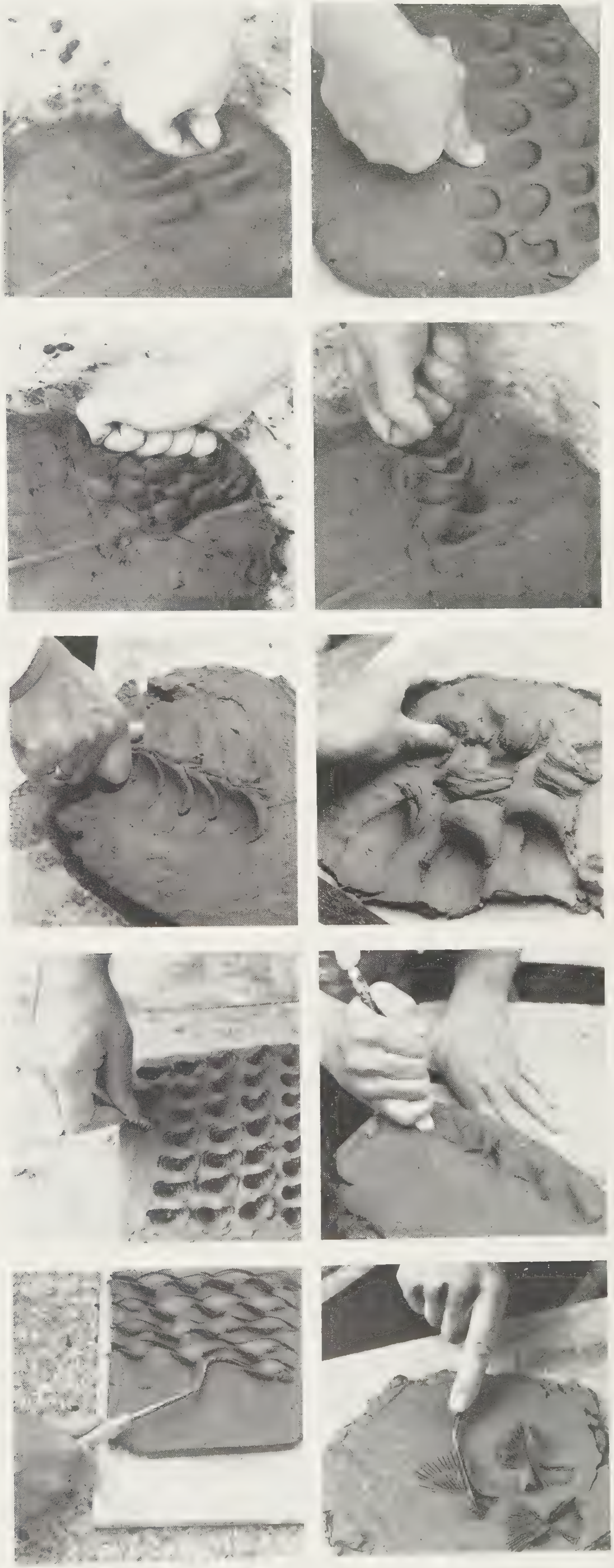
The working process used to execute a dimensional object is complex and requires manual skill. The abundance of materials, means, and working procedures demands a clear direction for creative manipulation. Through objective conditions dimensional, creative possibilities and criteria are discovered, analyzed, and differentiated. Given themes and materials are tested by extensive experimentation with forms and technical procedures. Creative ideas and statement possibilities are defined and clarified by comparing the results. Depictions of objects are developed through many trials. The interrelationship between the correct investment of skillful technique, and creative ordering of volumes, forms, and rhythms must be worked into an interesting unity. Arbitrary decisions are avoided.

The transformation—the effect of the worked form into different materials and techniques (i.e., recasting the same form)—requires new creative aspects and experiences.

Applying the appropriate criteria to these processes enables the students to draw conlusions concerning the entire working process and renews and refines their involvement. They are integrated into new goals.

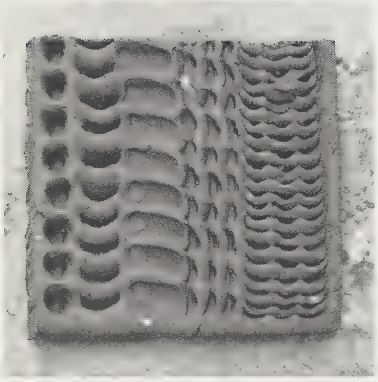
Besides ordinary materials (clay, plaster, and wood) modern materials such as silicon, polyester, and plexiglass are utilized in the exercises.

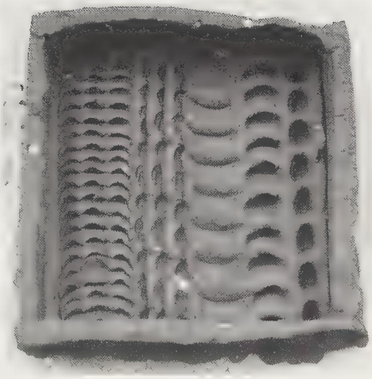
In the first three-dimensional investigation hand and fingers as well as energy are utilized with the elastic material clay. Many hand-finger positions are discovered through playful observation. They are used instead of tools to imprint the form. Tension, pressure, and torsion movements make visible many possibilities of shifting or deforming the raw material. A clearly organized, rhythmic surface structure of concave and convex forms is achieved from one of these spontaneous possibilities with organic formal elements. The contrasting dimensional effect of the counterform becomes visible by casting the object in plaster, lead, or some other material. Creative possibilities of expression in the selection of raw materials are experienced through the extreme change of material.
In a further part of the exercise appropriate objects (tools as opposed to manual manipulation) are chosen and used as stamps; contrasting geometric elements with organic relationships result from the rhythmic deformation process.

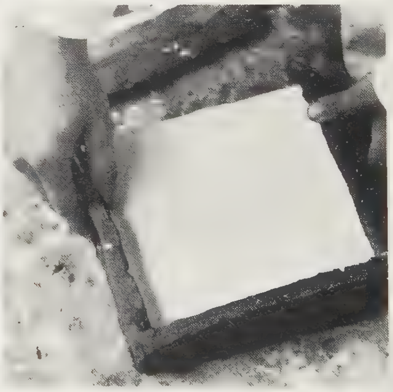


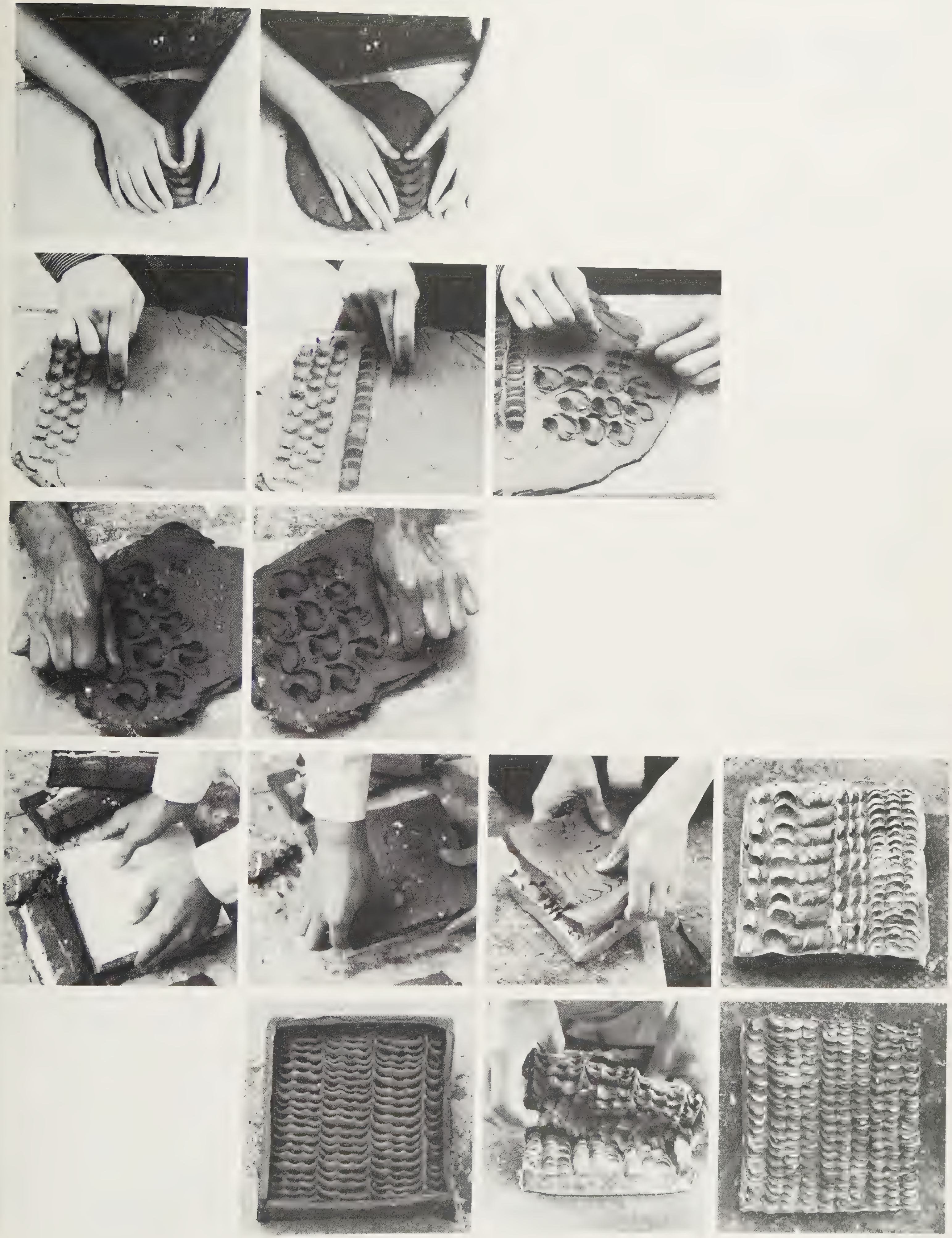
The following photographs show the first deformation investigations, the formal elements resulting from different hand-finger positions, and the use of tools as stamps.

In the three rows above, from left to right, the photographs show the construction of a clearly organized surface structure. Enclosing the result in clay, casting in plaster, separating the counterform, and comparing the different materials are visible in the two bottom rows.

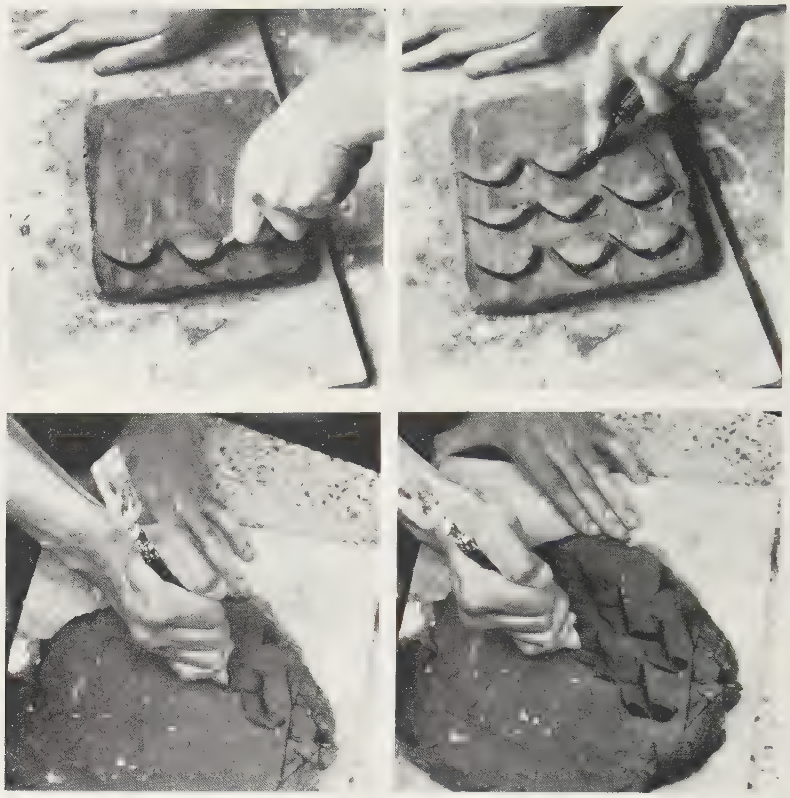


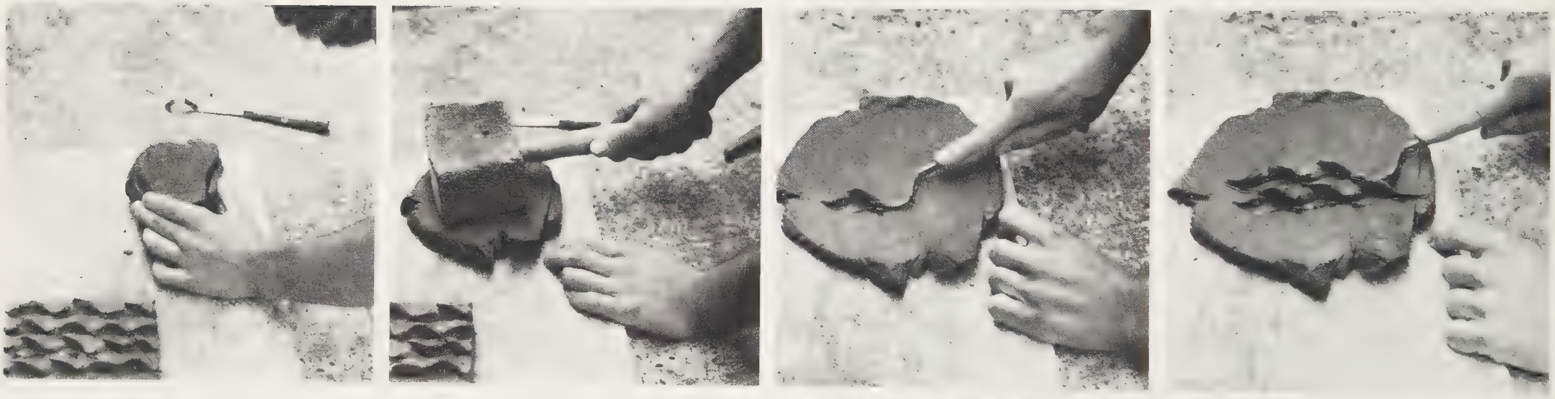


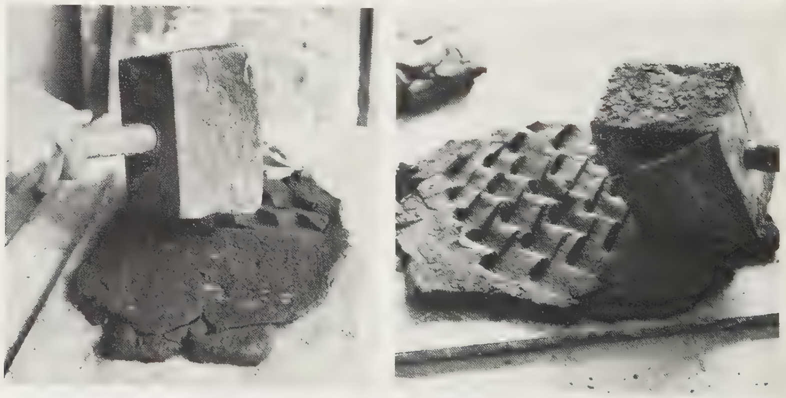


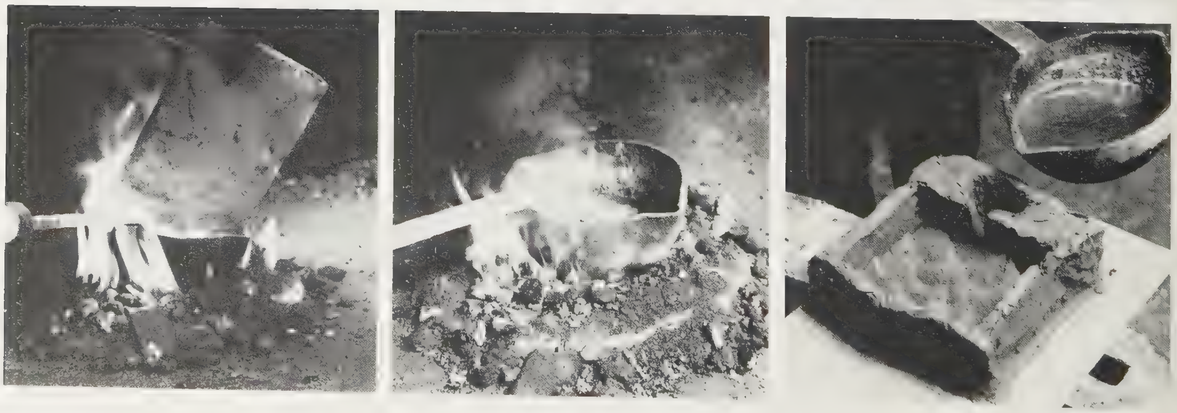


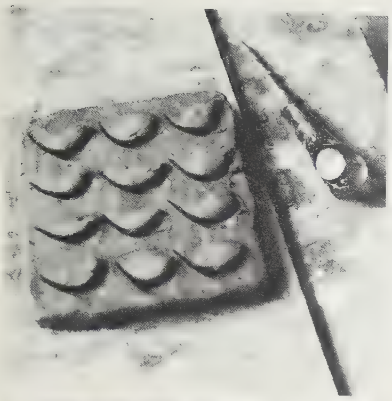
The photographs show, from left to right, four different tools used as stamps. On the extreme right of the second and fourth rows the actual counterforms appear in plaster. The bottom row documents lead casting.

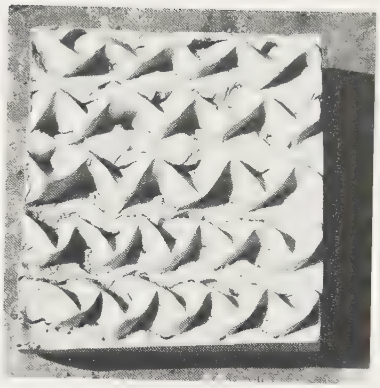


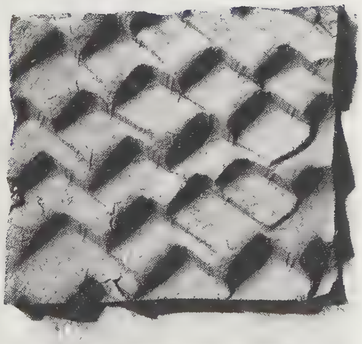


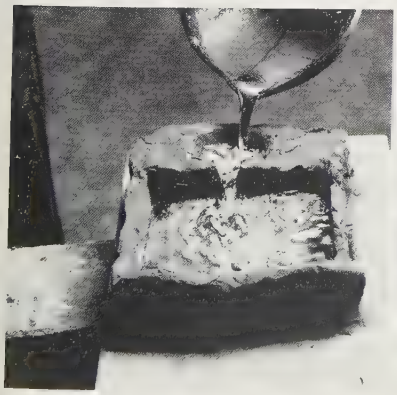


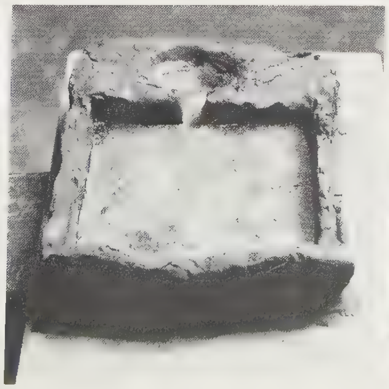


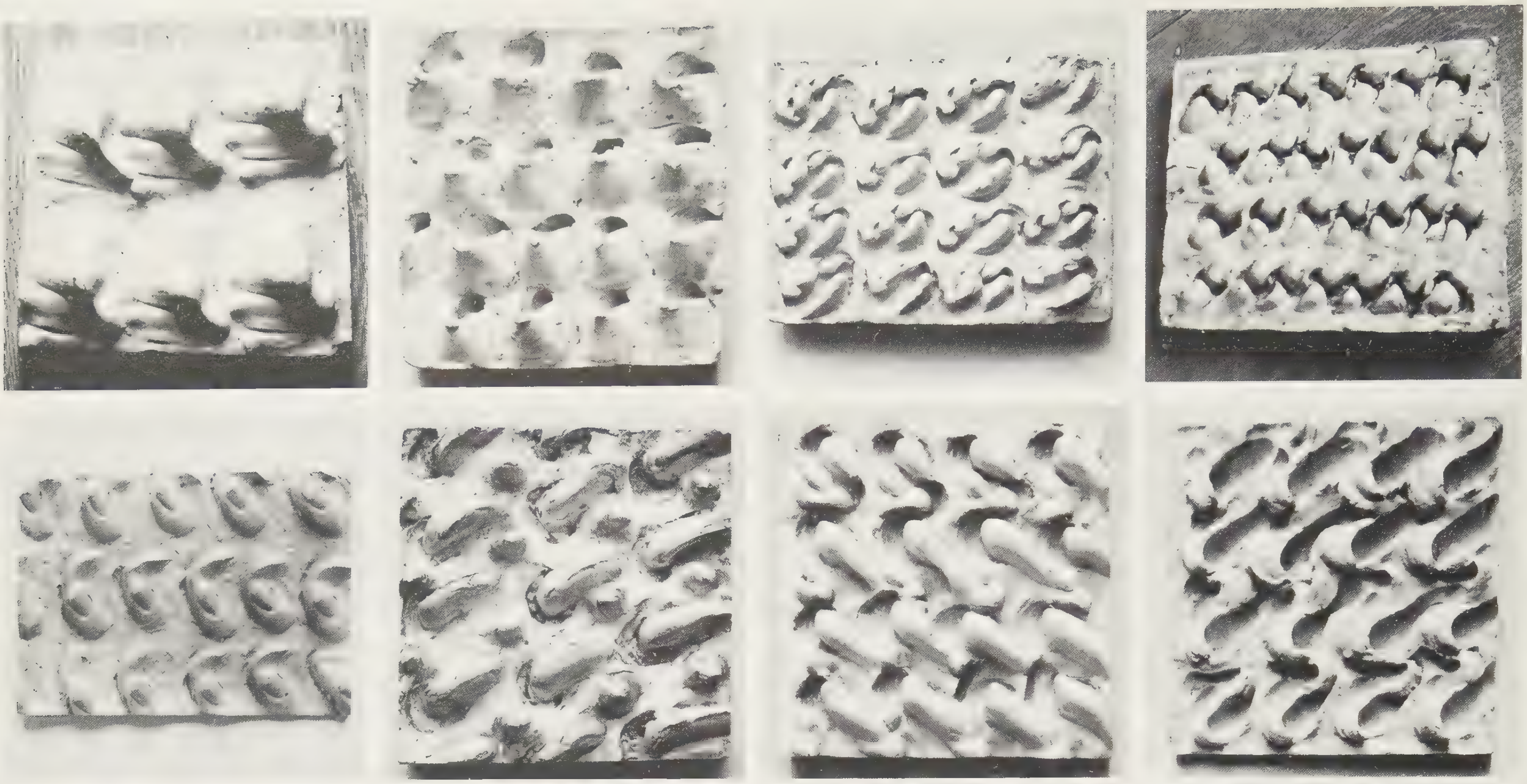




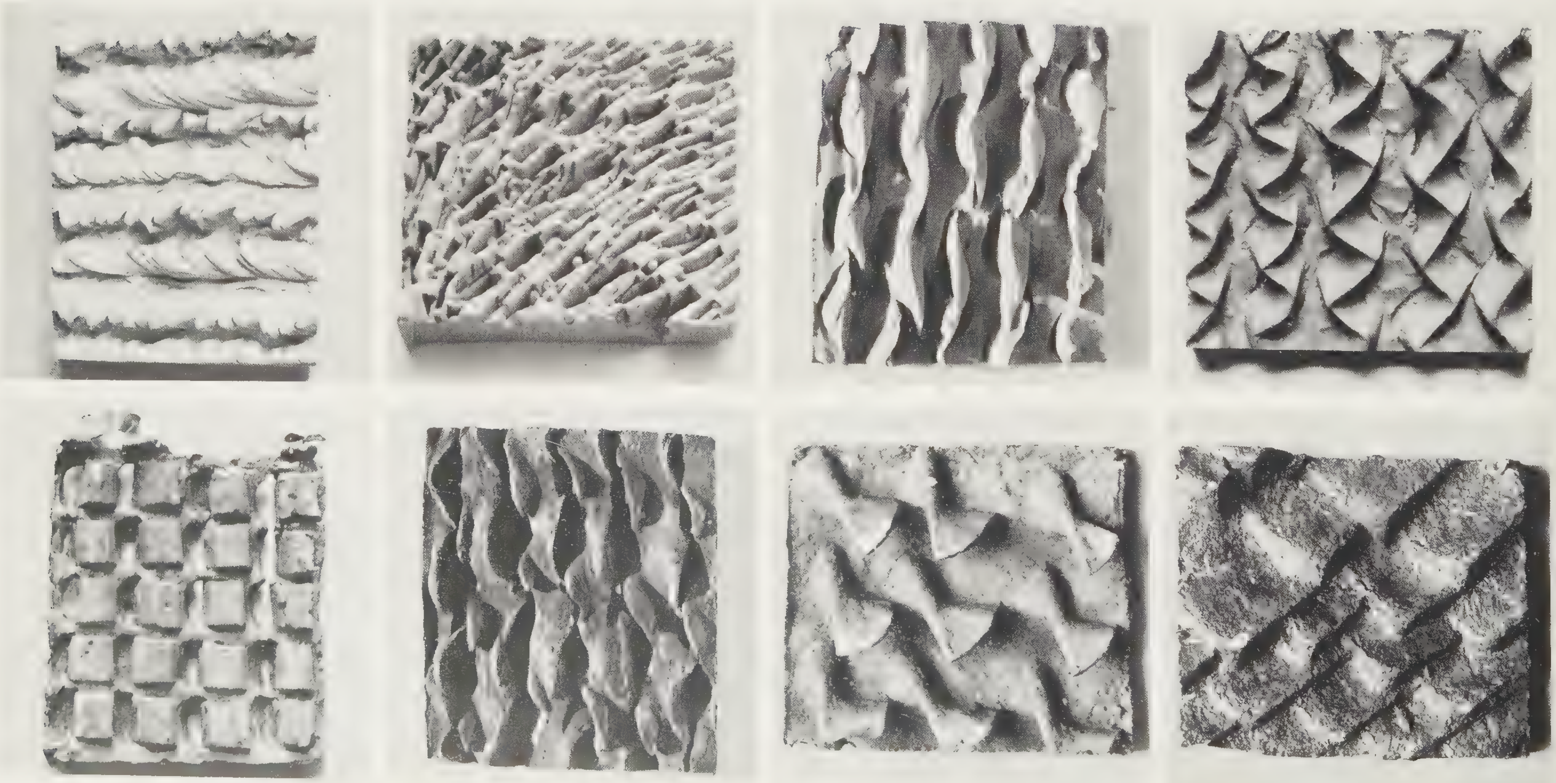




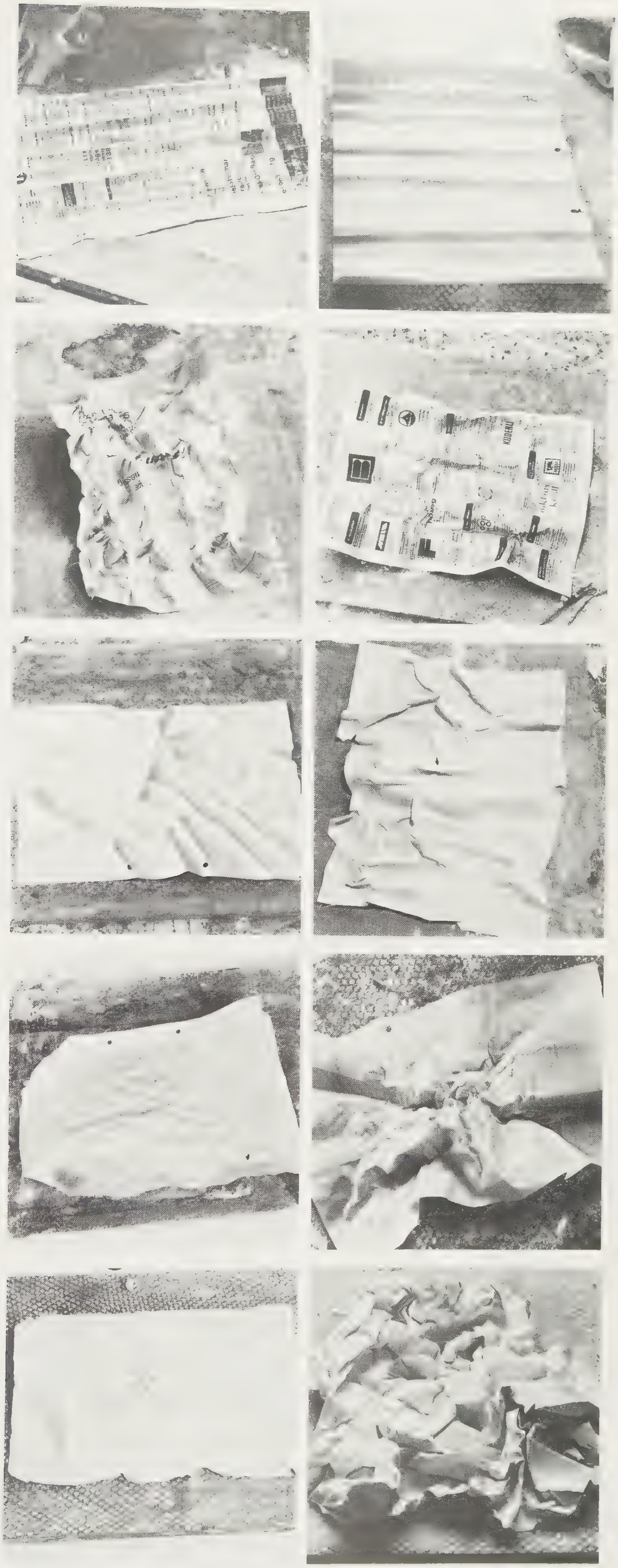




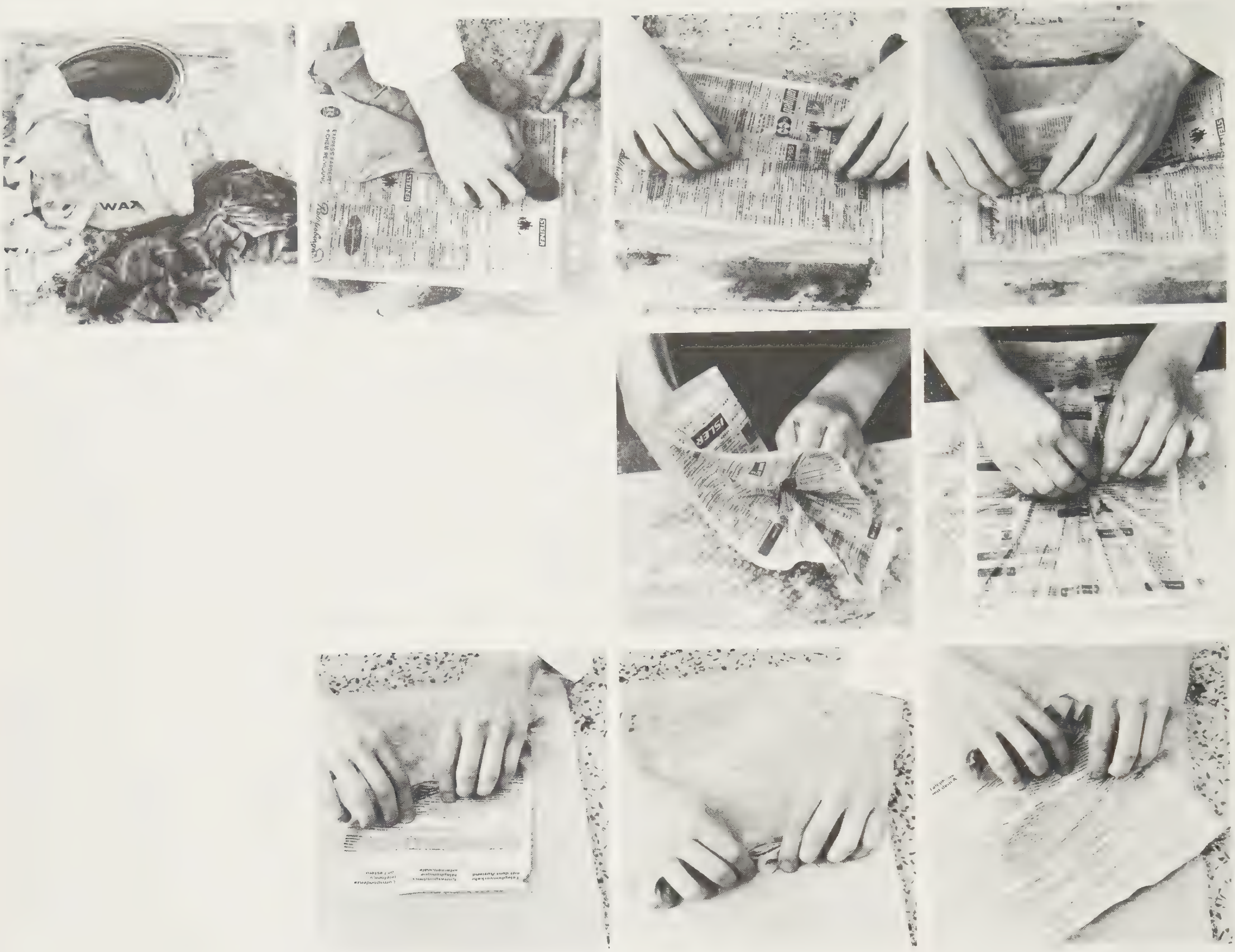
The examples show, above, manually worked plaster with clearly organized formal elements; below, as a comparison, casted-plaster and lead-surface structures formed with various tools.

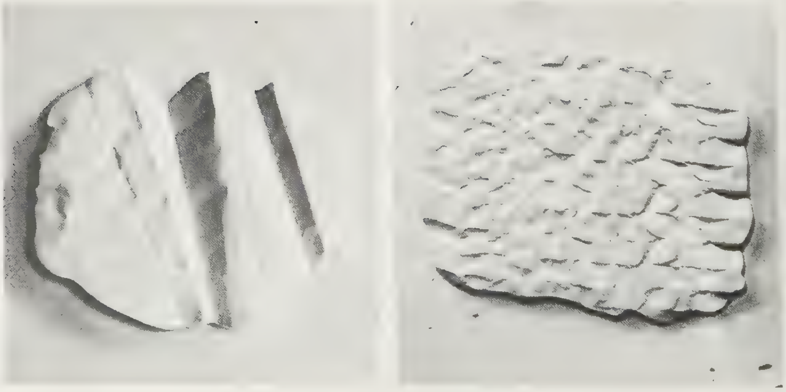


Unlike the preceding exercise with clay, a volumeless, flat piece of paper is used here as a mold and deformed manually. Countless dimensional appearances are produced through playful, chance folding and wrinkling. Plaster is applied to this paper mold; the deformation is fixed; and the paper is removed. One of the deformation elements is intensified dimensionally into a composition with clear progressive-regressive gradations. Achievement of the appropriate forms demands subtle, concentrated observation and a clear conception with many trials. In forming a gradated structure the individual pieces and the format are determined with masks. Missing or unclear elements are completed or replaced with revised or new forms. The cut pieces are joined into a definite structure and reinforced with plaster. The plaster model is cast with a synthetic material, producing a wide range of applications and a different material appearance. Using an elastic negative with a silicone-rubber base allows extensive undercutting of the plaster model and does not present problems in removing the cast. Polyester can be colored differently and is used for the positive cast.

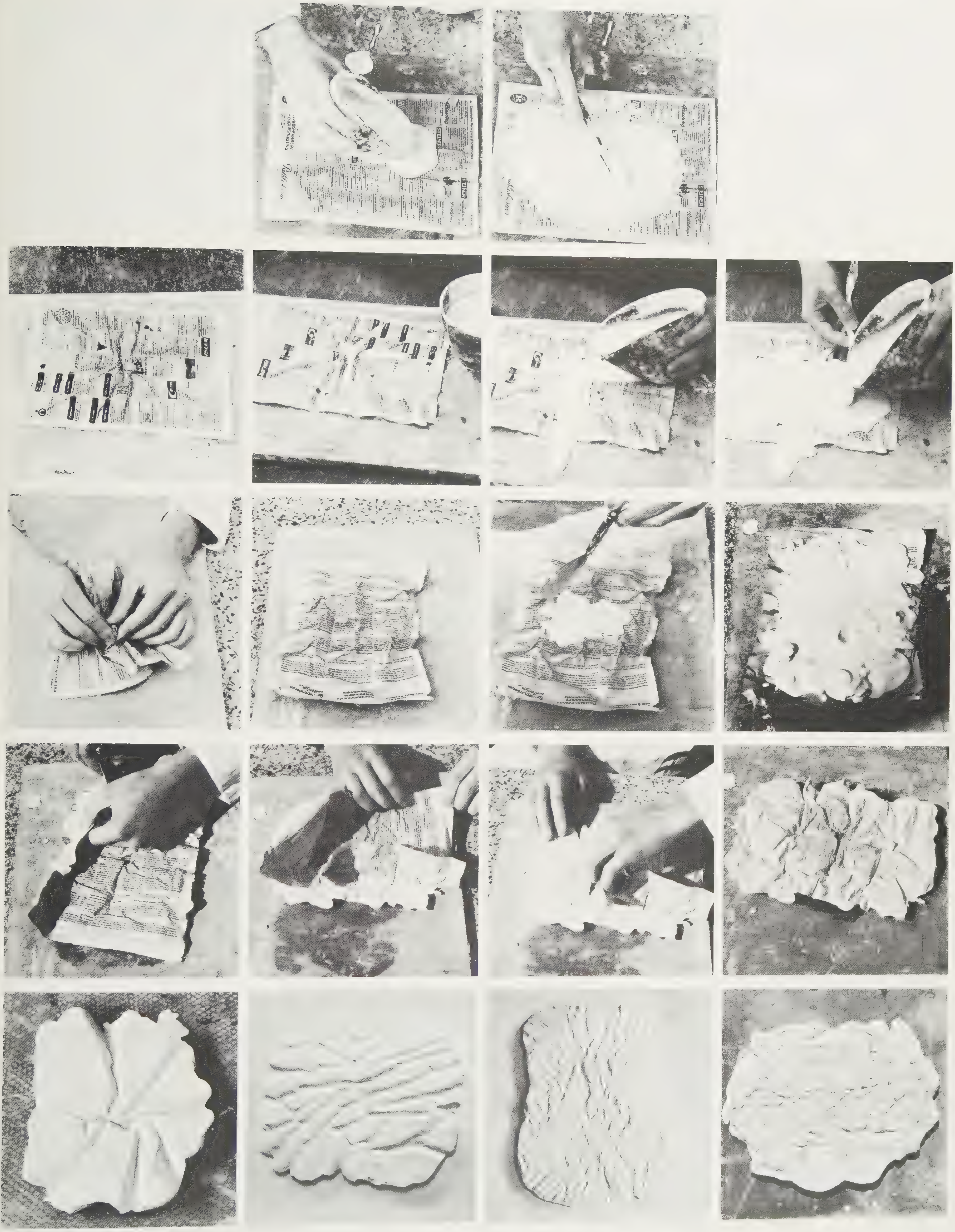


The following photographs show different deformations created by chance folding and wrinkling of the originally volumeless paper.

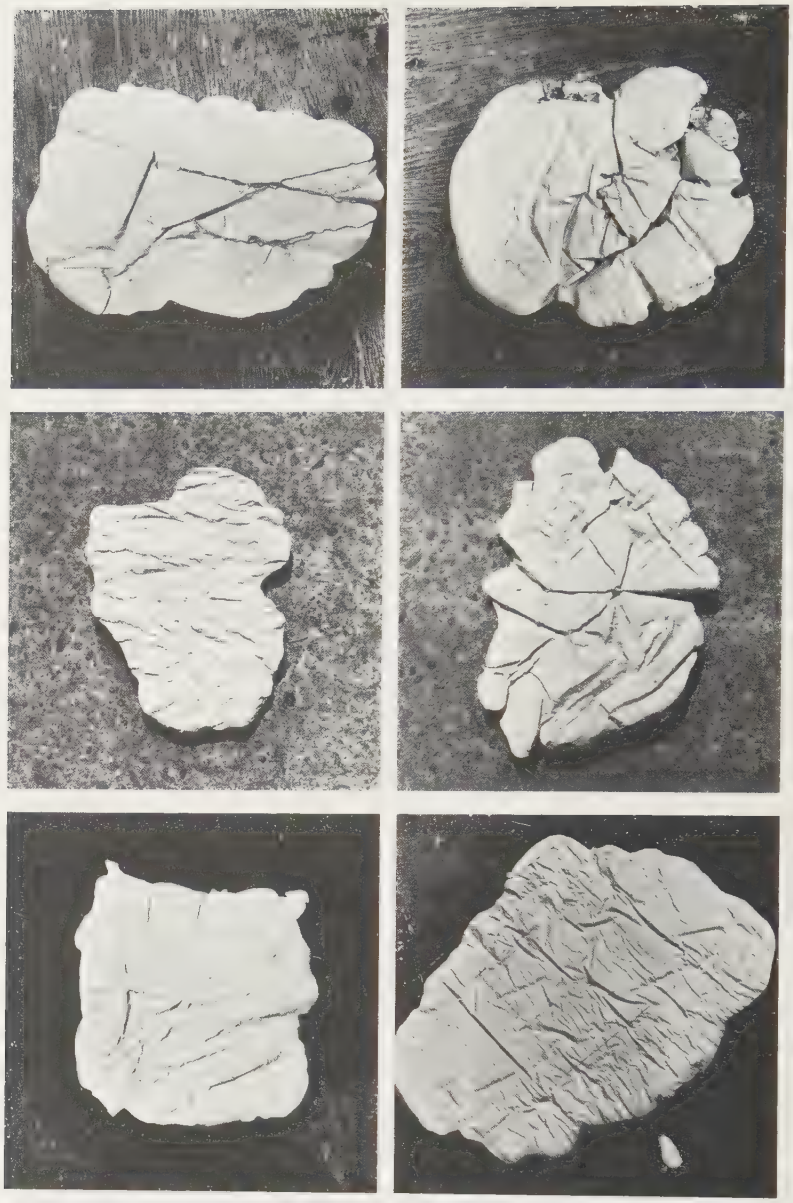


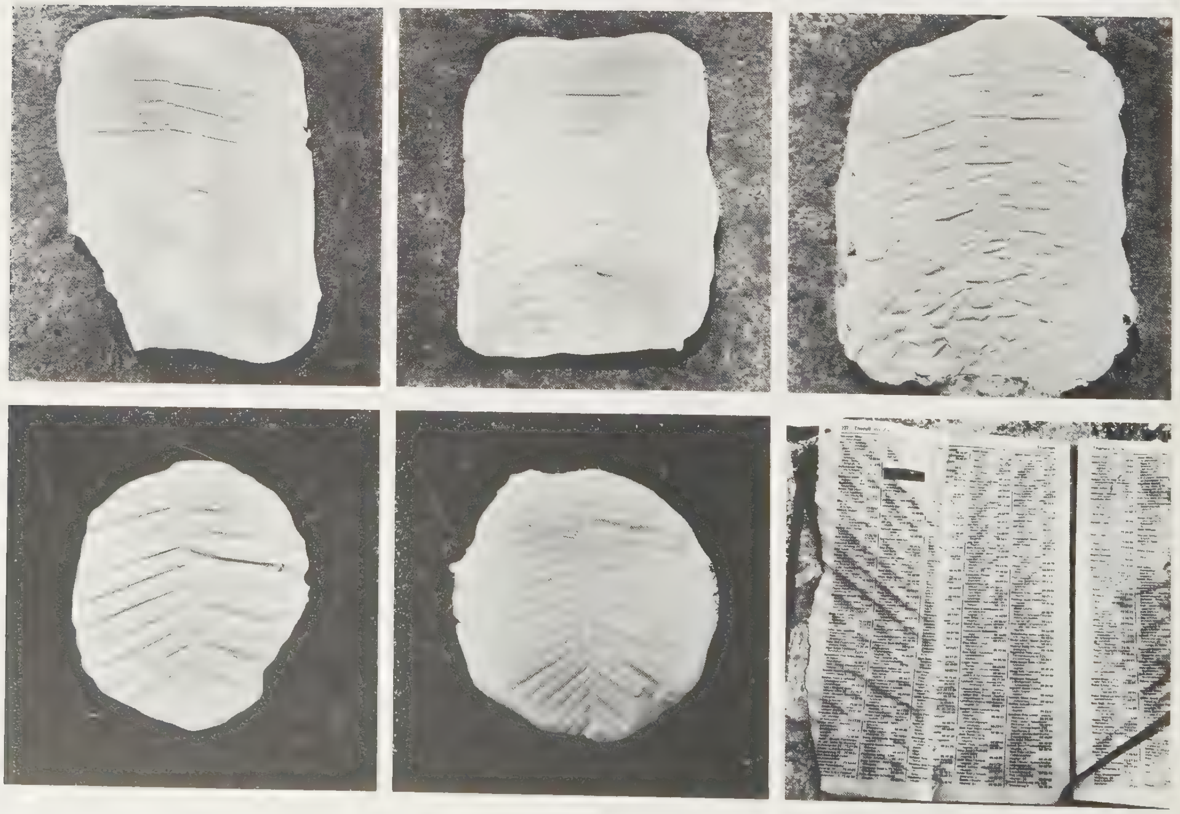


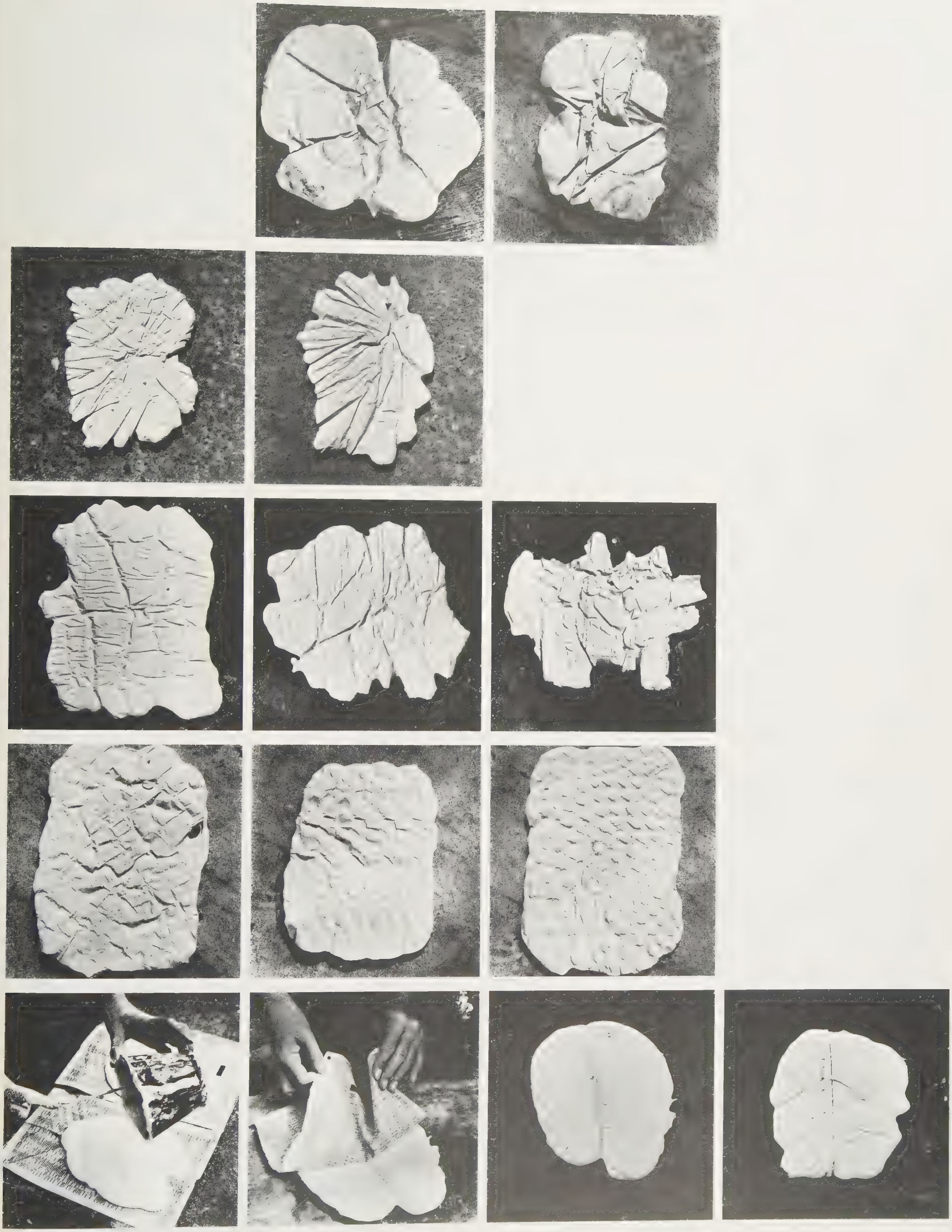
In the three rows above, from left to right, the paper mold is deformed and fixed with plaster. The careful removal of the now useless paper from the deformation element is shown in the fourth row. In order to easily remove the paper from the plaster form, it is pretreated with floor wax (top left). In the bottom row the forms that serve as the starting point for the progressive-regressive gradations are photographed.

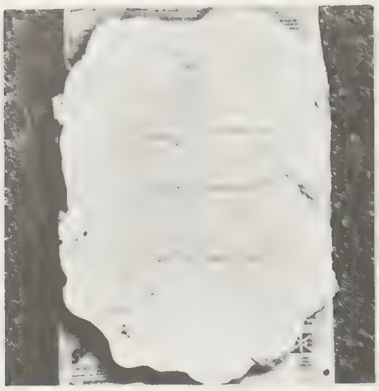


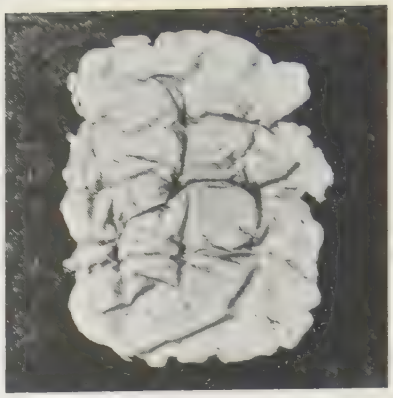
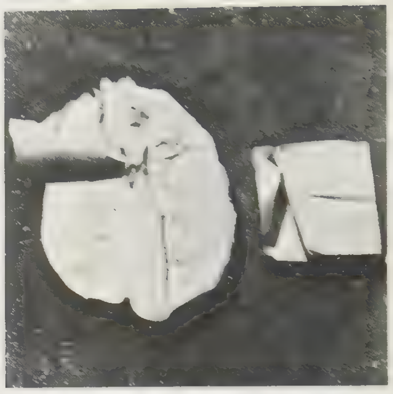
Differentiated, gradated, formal elements are achieved independently by the students. With the exception of the last row, the examples on this double-page spread are represented horizontally and vertically in a gradual dimensional relationship of formal elements. In the bottom row additional variations of different formal elements are shown in progress.



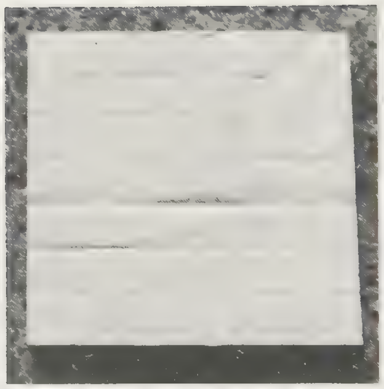


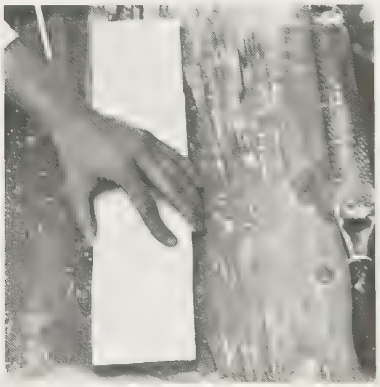
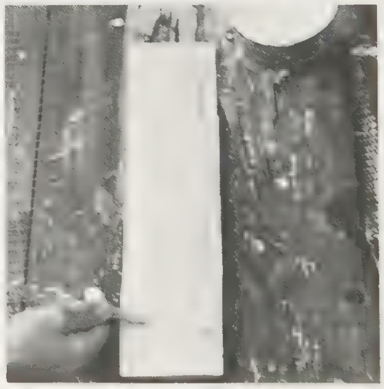
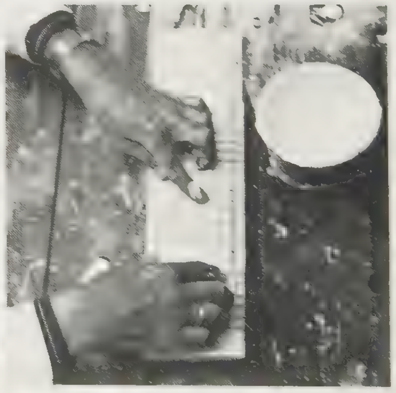




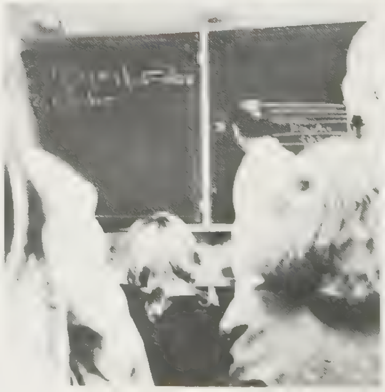



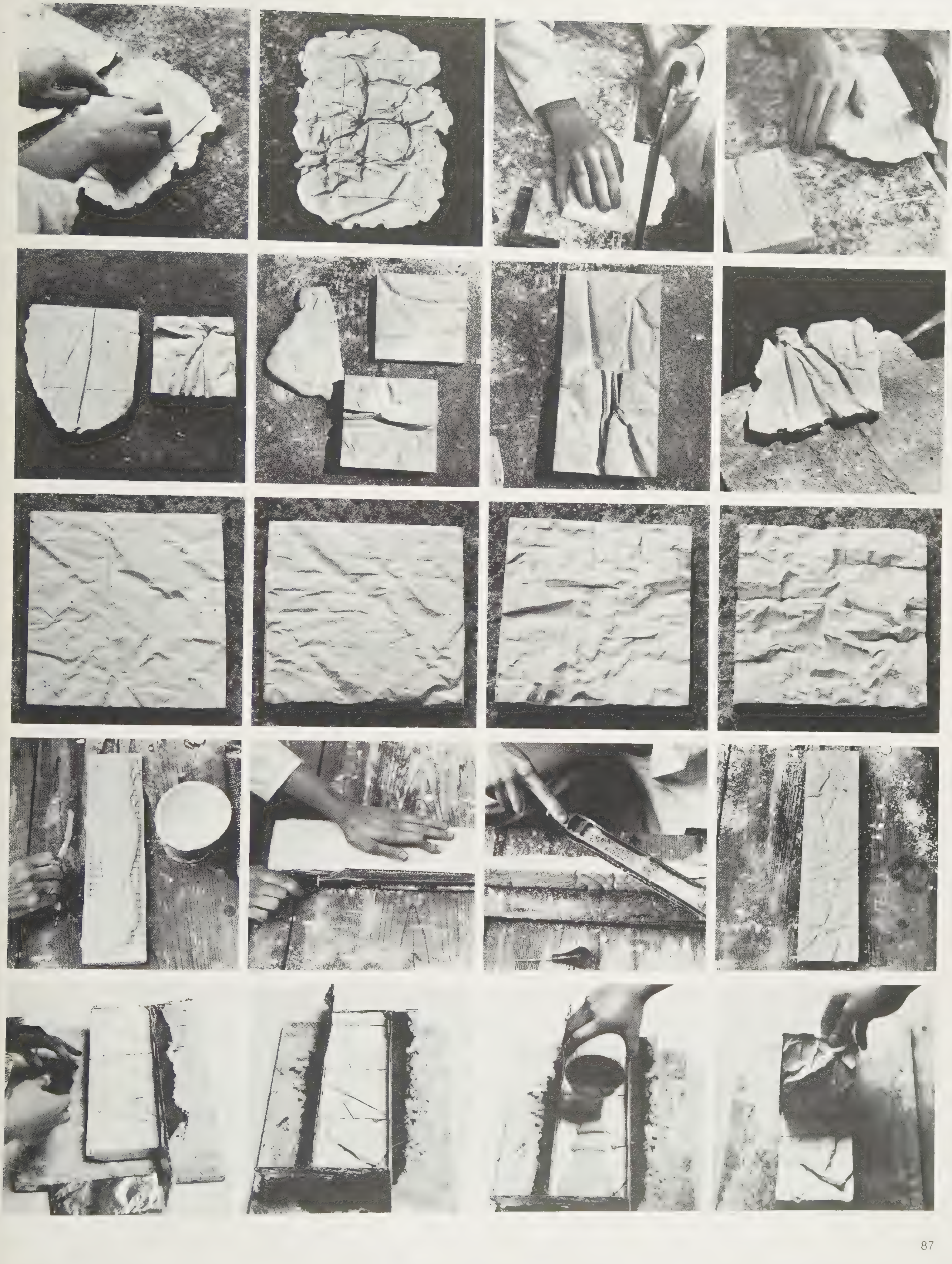
From top to bottom, left to right, the photographs show:
Three clearly gradated rough forms before cutting; the determination of the final forms (deformation field), using a cardboard mask to achieve the desired composition; cutting the pieces; a comparison of cut and raw forms; a comparative sequence of cut forms, with the two middle steps eliminated from the final structure because of their similiarities and diagonal elements;



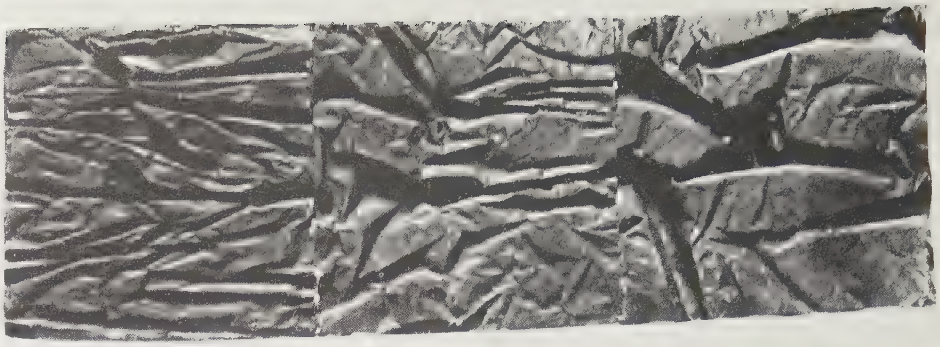




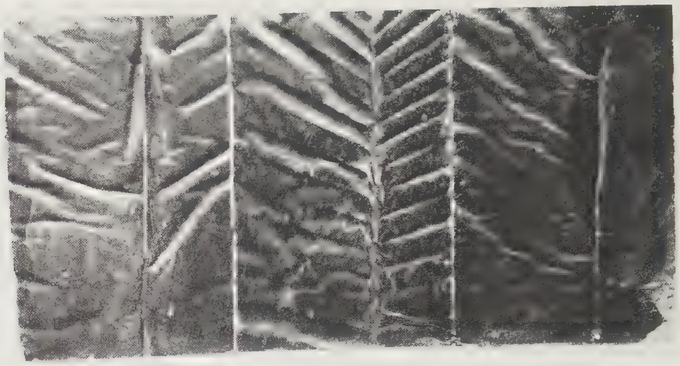
reinforcing and stabilizing the joined elements with plaster and leveling the sides with a rasp; teacher's explanation of the ingredients and characteristics of the synthetic material and enclosing the plaster-form model in order to cast an elastic silicone negative.

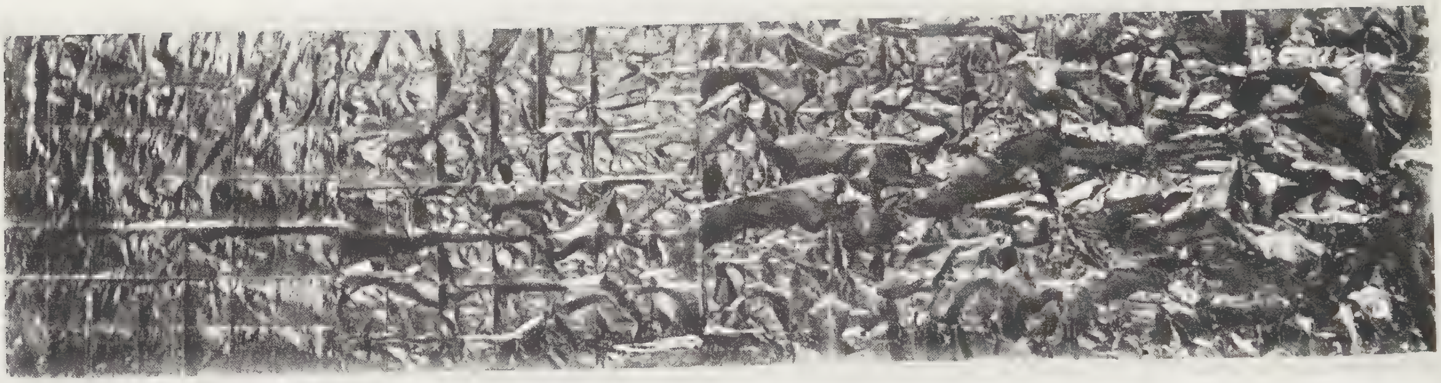


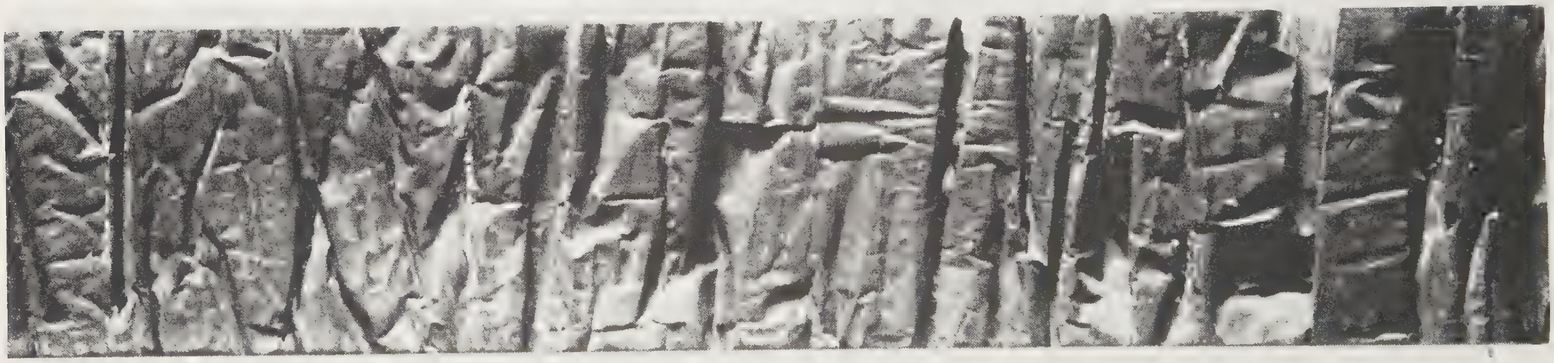


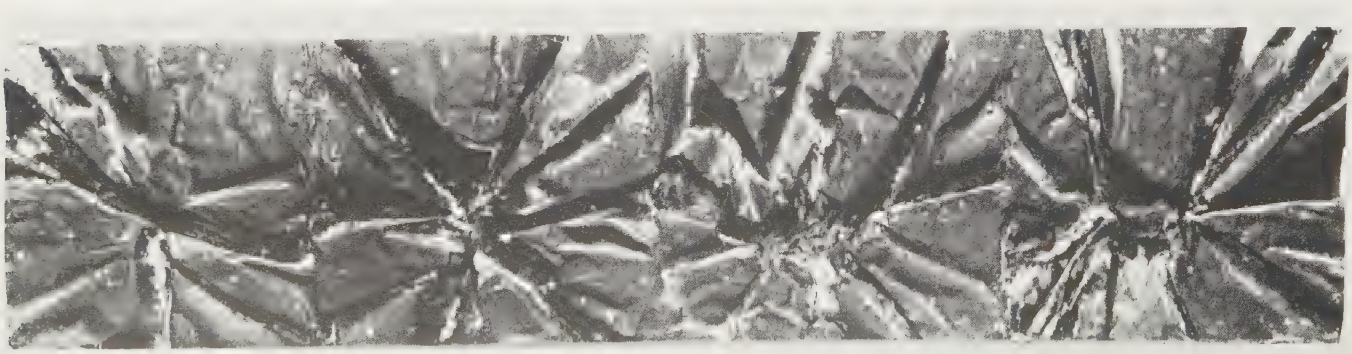
The work of five students documents differences in deformation, dimensional progressive-regressive intensification, and different expressions of structure through the change of material.



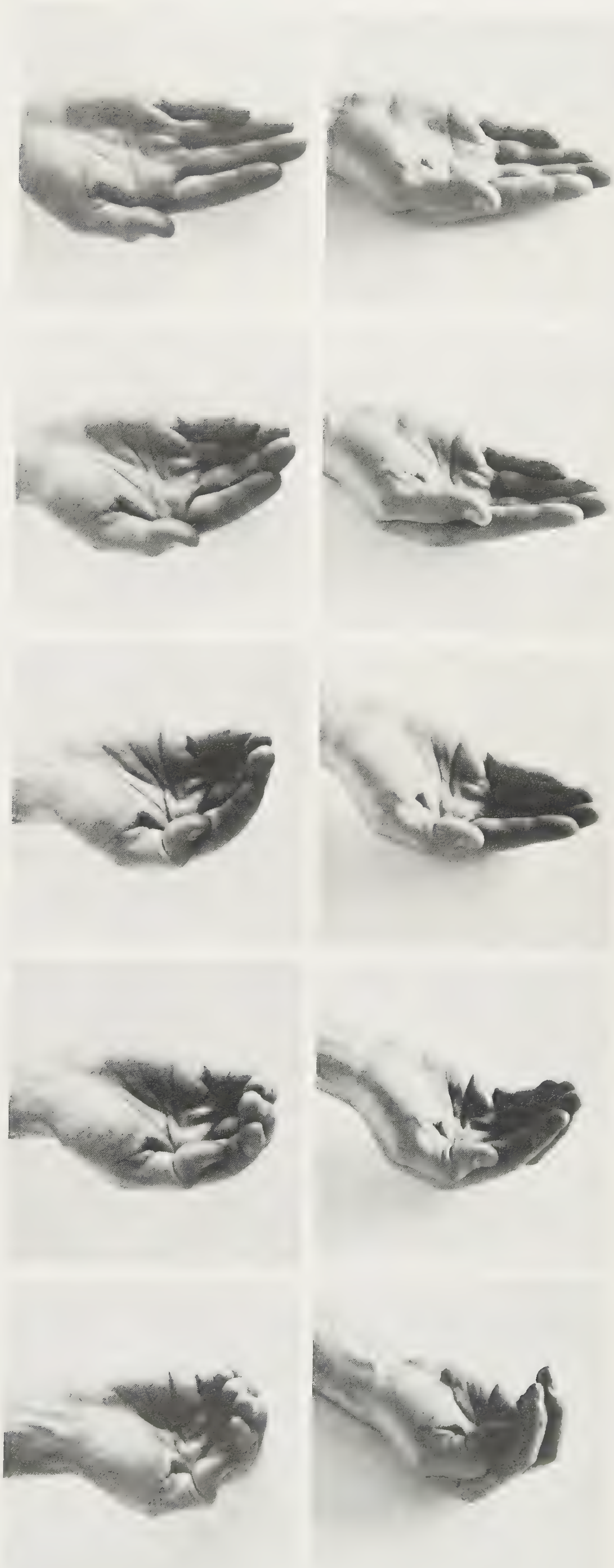






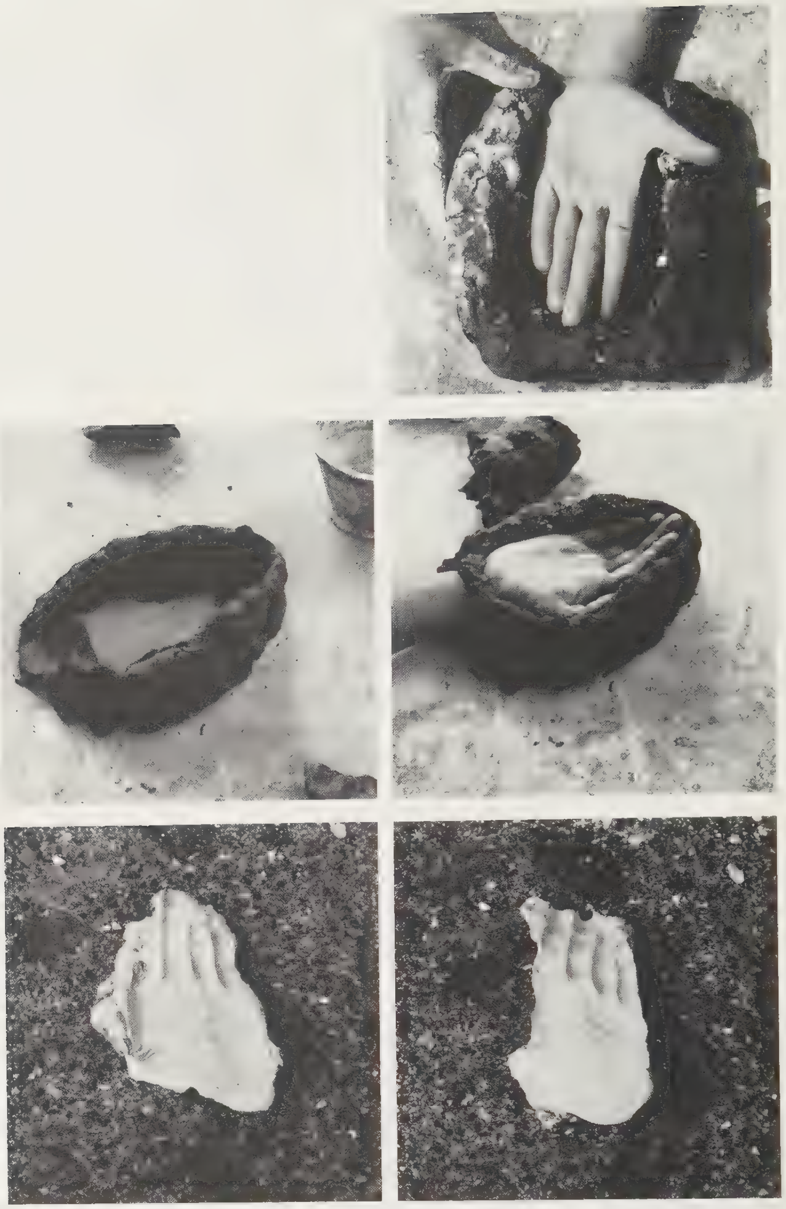


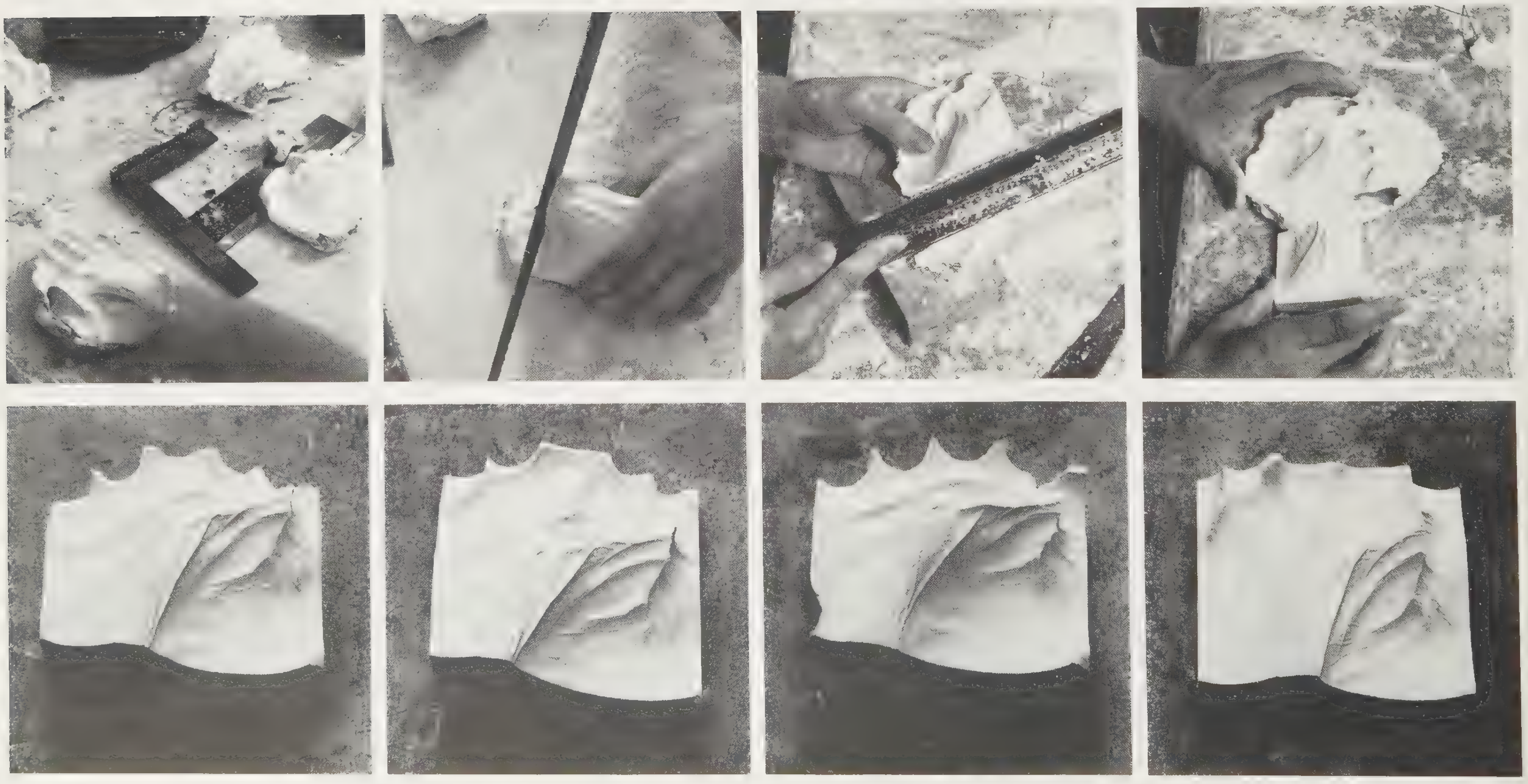
The hand, used in the preceding exercises as an elementary tool, here serves directly as a mold. By opening and closing the hand volume changes are created. Corresponding to the movement, they can be formed differently and gradually differentiated. By observing playful hand movements various volumetric forms are discovered, fixed, and made dimensionally visible by means of plaster casts. These movement phases are dimensionally visible: the inherent physical change of plaster, such as fluid-hard or cool-warm, is directly felt. Bizarre appearing forms are achieved, from one of which a defined deformation field (form element) is established. A progressive-regressive addition of forms is structured to correspond to this form element and to retain a constant deformation character. Producing the pieces requires concentrated observation and constant comparison. The parts corresponding to the deformation field are cut, compared, and joined into the desired formation, reinforced, and cast with plaster from behind at different heights. As in the preceding exercise, a polyester positive is made of the plaster model by means of a silicone negative.

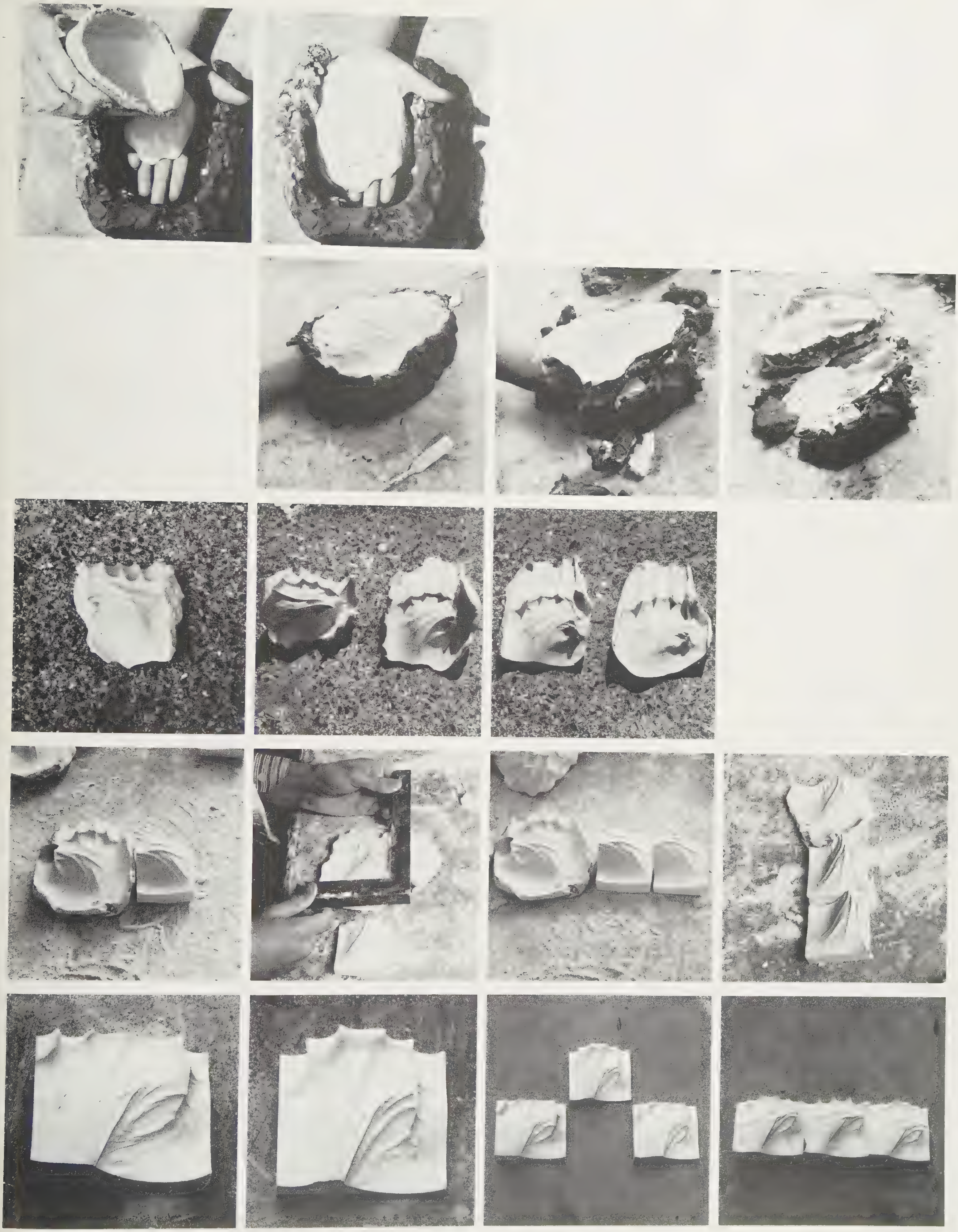


The following photographs show gradual, differentiated, volumetric changes created by closing the hand.

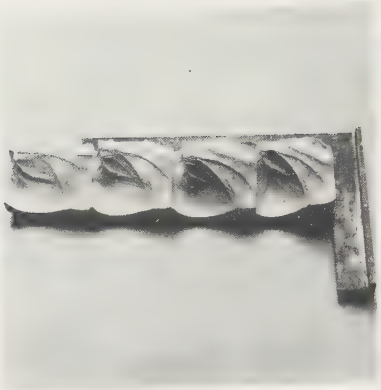
The photographs here and on the following page show, from left to right and top to bottom: different positions dimensionally fixed by means of plaster casting; various raw forms possible use in a differentiated, gradated structure; fixing and cutting the deformation field and comparising it to further form elements; and the desired rhythmically gradated structure, produced by comparing and exchanging form elements.

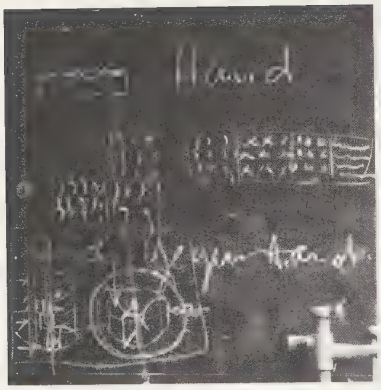


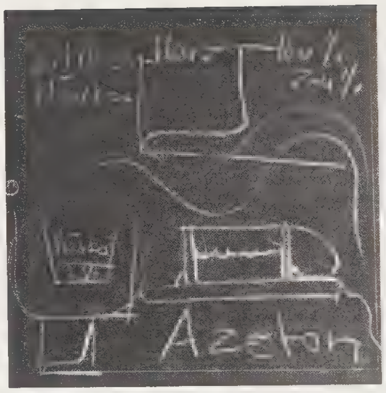


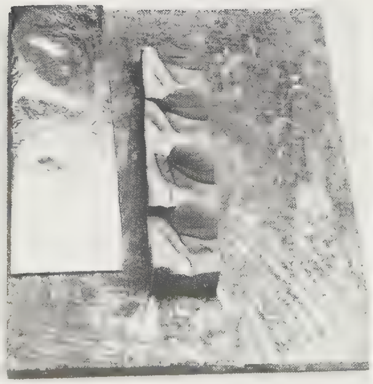


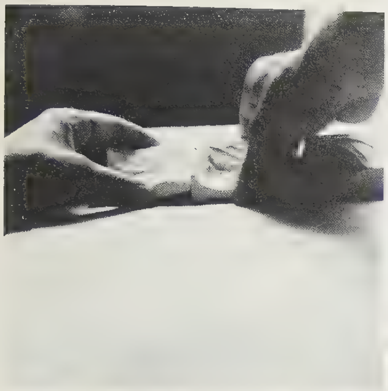
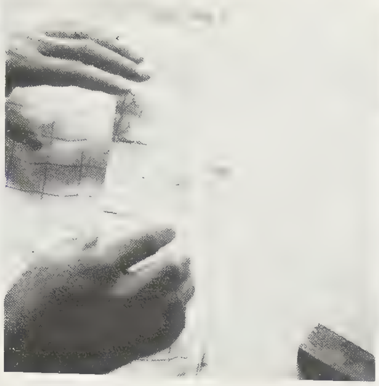
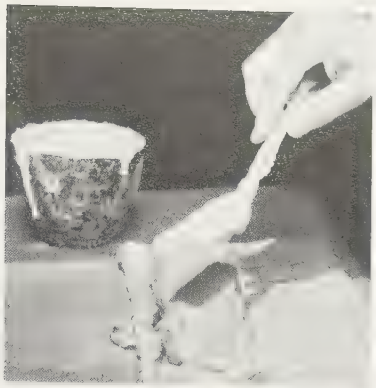
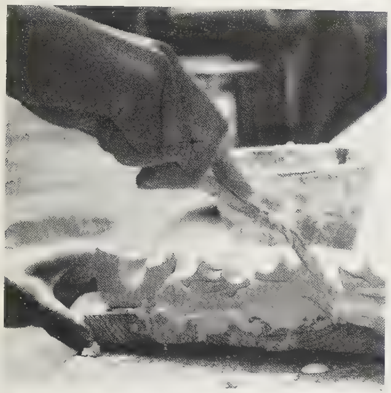
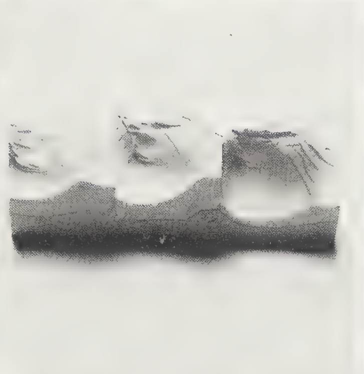
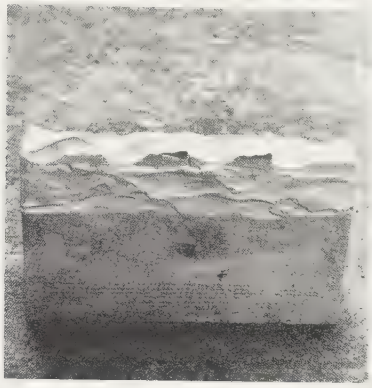
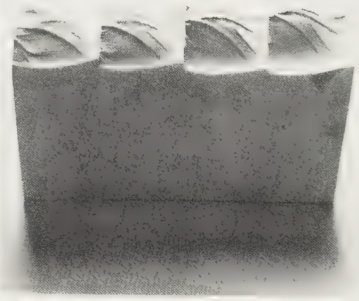
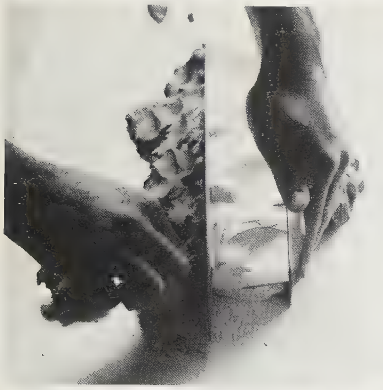
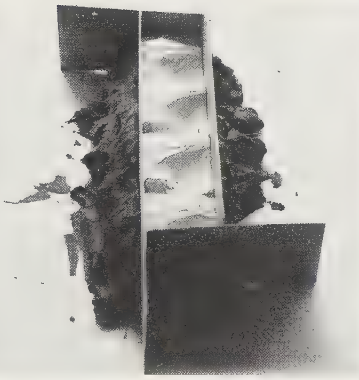
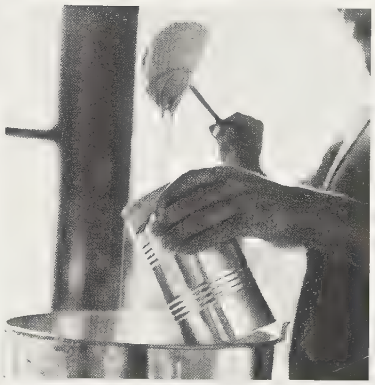
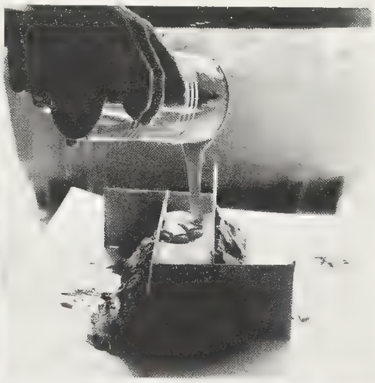
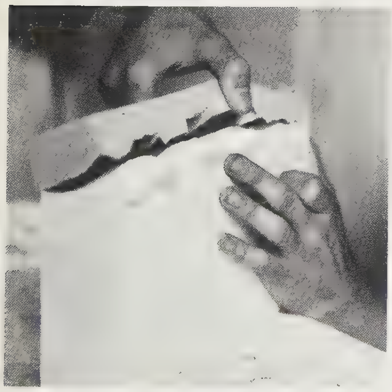
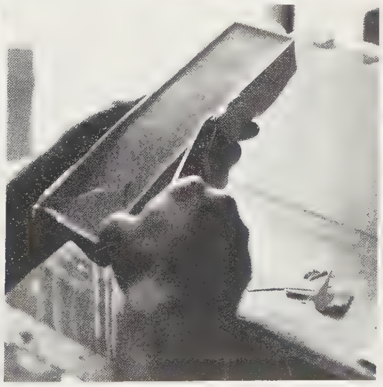
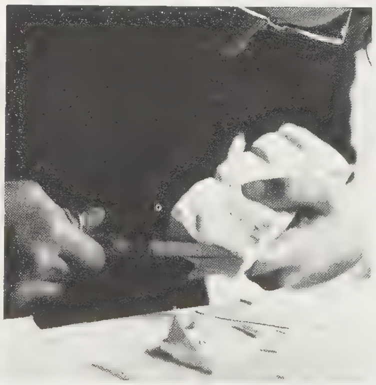
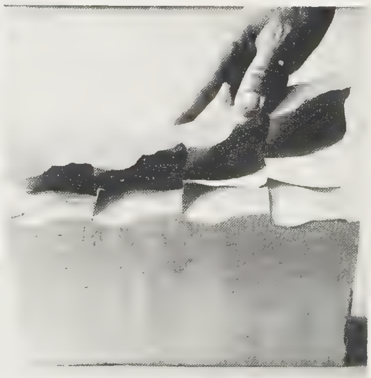
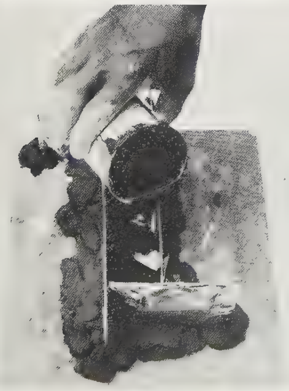
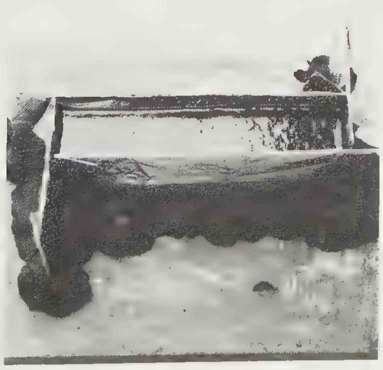
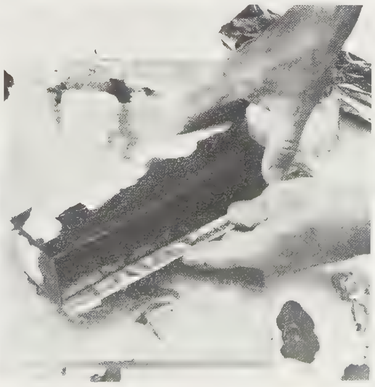
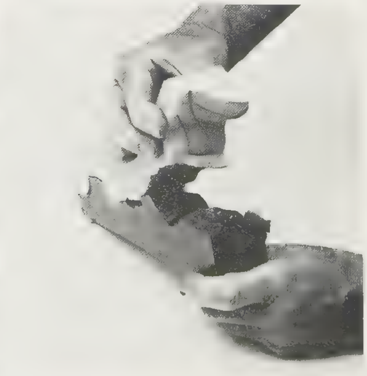
The parts of the structure are mounted, reinforced on the back with plaster at different heights, and cleaned. The three rows below show how to transform plaster forms in polyester by means of a silicone negative.



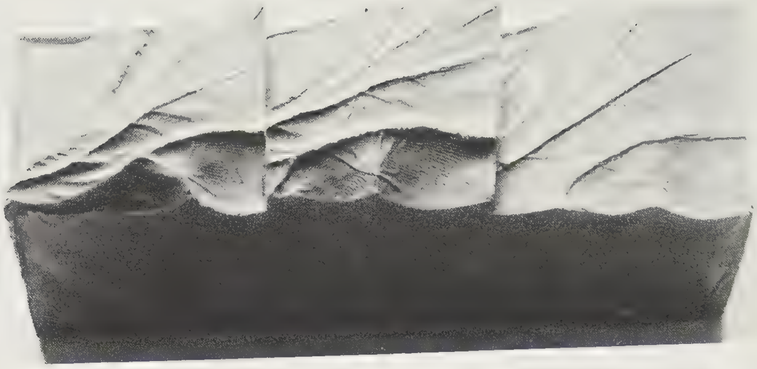


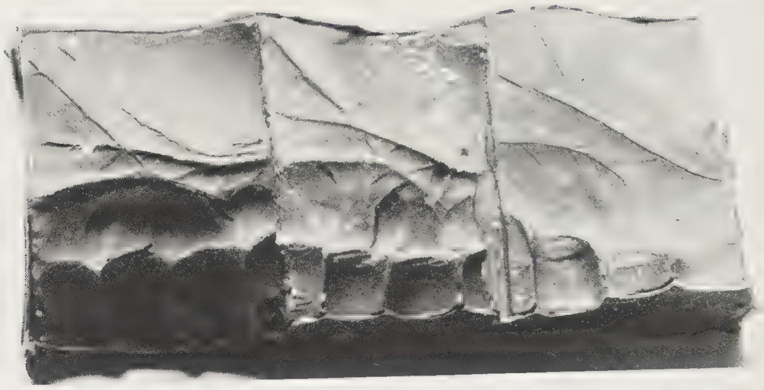


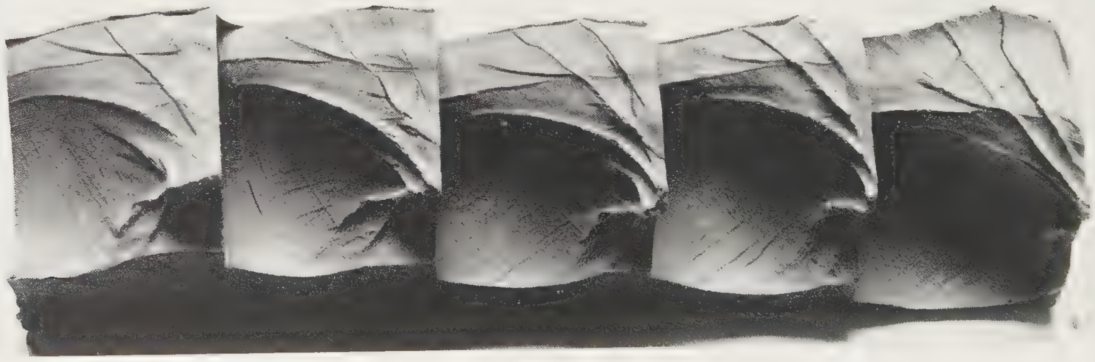


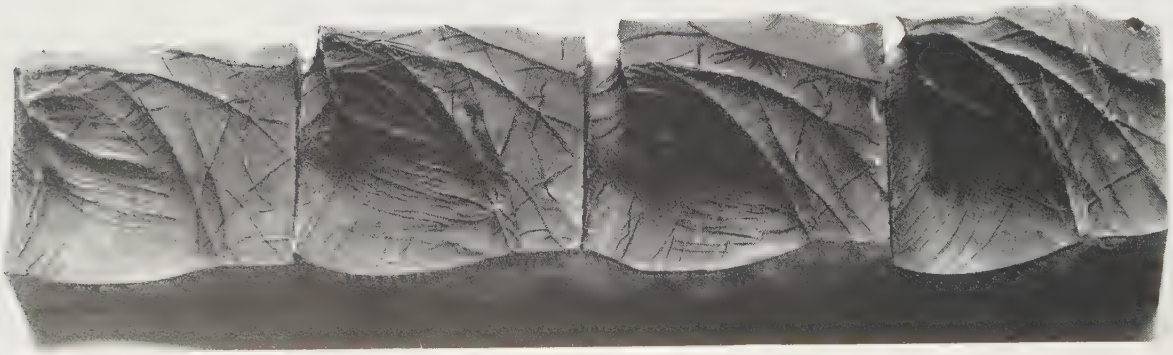




















The diversity of dimensional intensities is evident in the distinctive gradations of these clearly formed polyester casts.

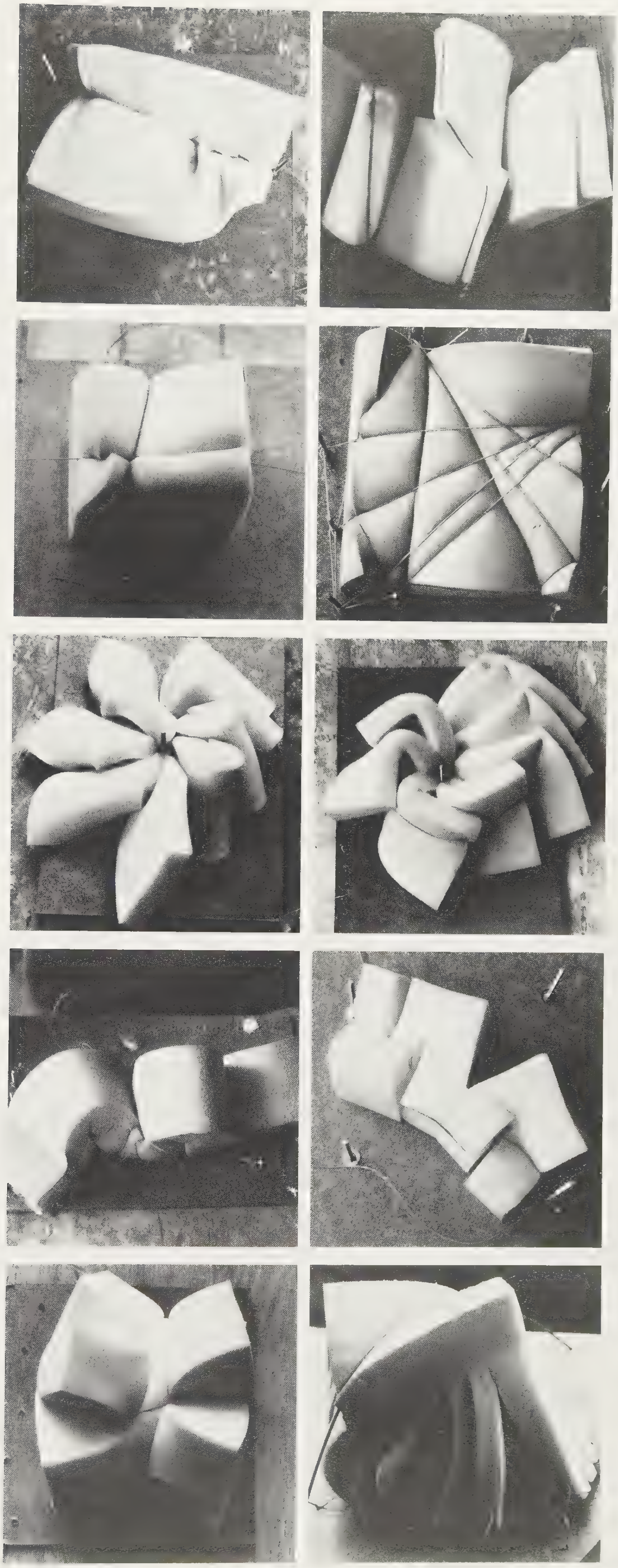






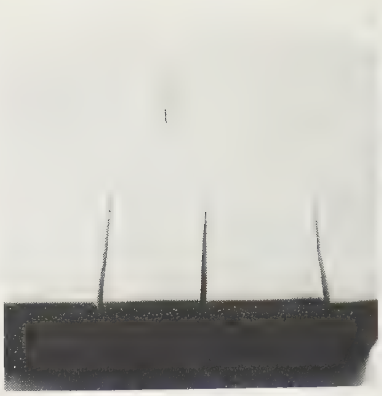


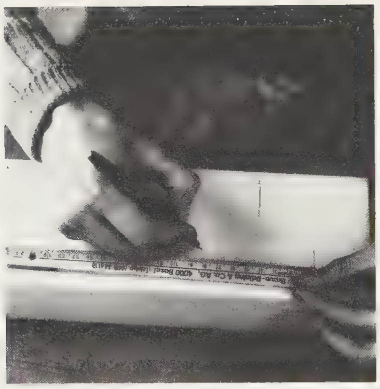
Conscious awareness of plowing a field or forming furrows is the inspiration for this exercise with foam rubber. Perception sensitizes the ability to develop abstract processes with this elastic, compressible material. Suitable, playfully discovered, volumetric elements are worked into a clearly organized, rhythmic composition. A block of foam rubber or cut pieces are manipulated with various string-binding techniques. The string is fastened to bolts, which are screwed into a suitable ground for the desired structure. To stabilize the foam-rubber elements under tension, its surface is covered with plaster to neutralize its elasticity and stabilize the volume. Covering the surface of the form with plaster requires subtle, skillful work, and the volumes are simultaneously tactilely experienced. After removing the inserted supporting material the object can be additionally strengthened with a colored polyester covering.

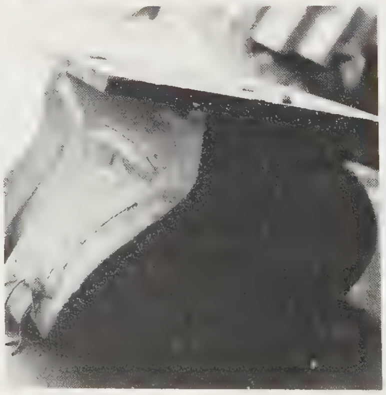


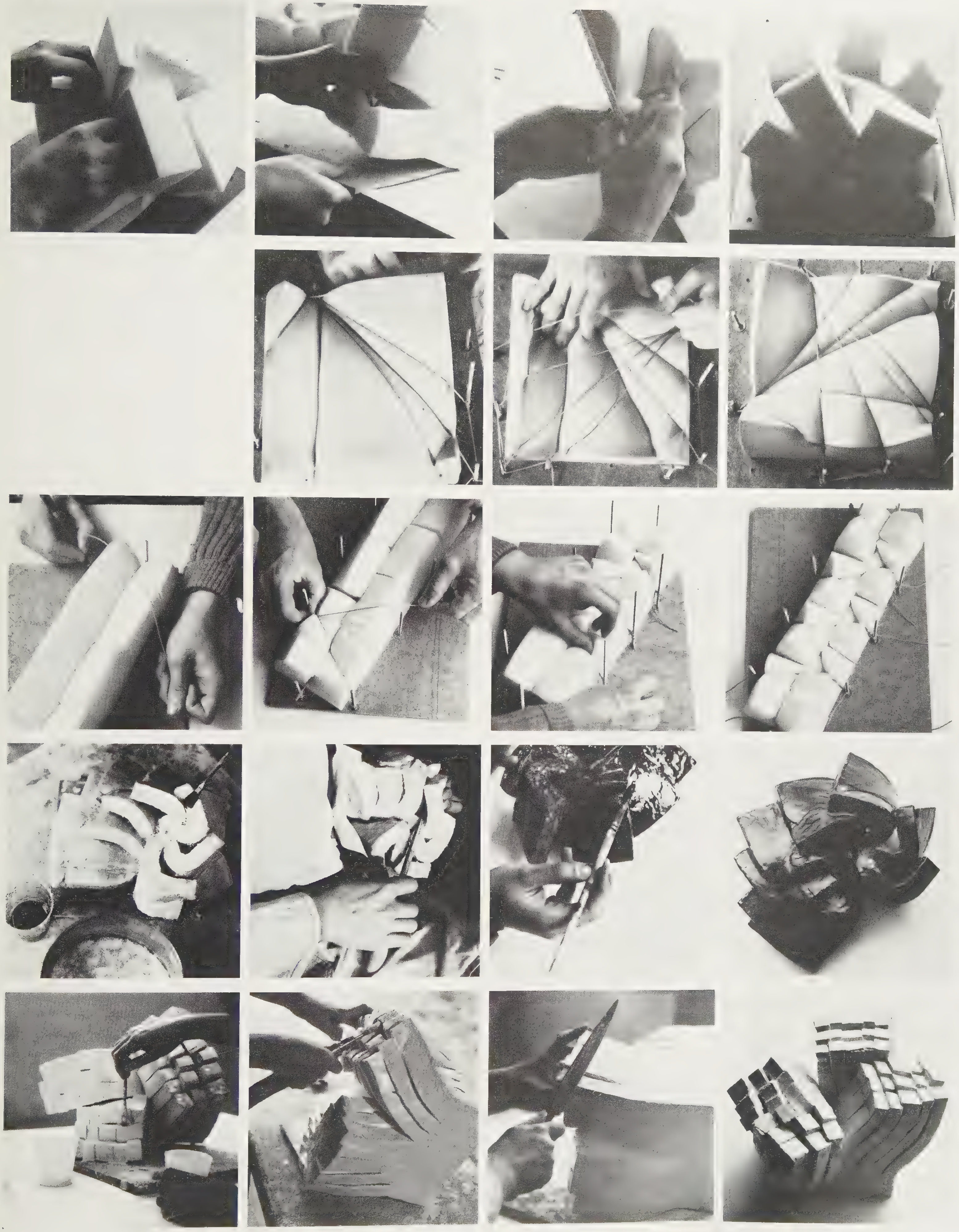
The following examples show various spontaneous deformations of foam-rubber elements.

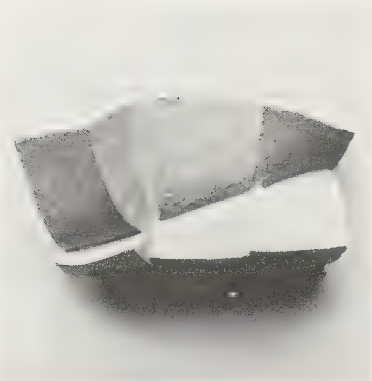
From left to right, the three top rows show the organization of foam-rubber blocks and the different binding techniques with string and bolts. Covering the foam-rubber surface to stabilize the form, cleaning the edges, and strengthening it with a polyester covering are shown in the two rows below.

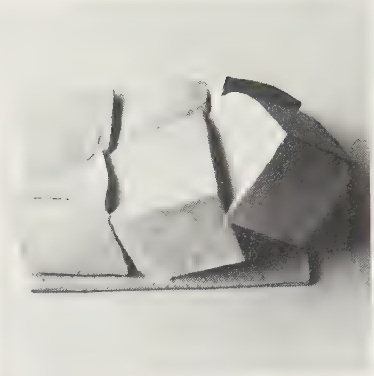


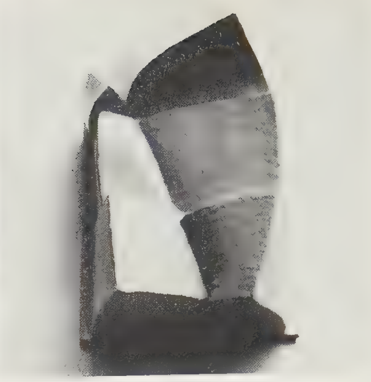




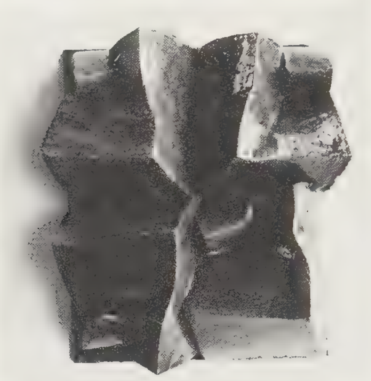


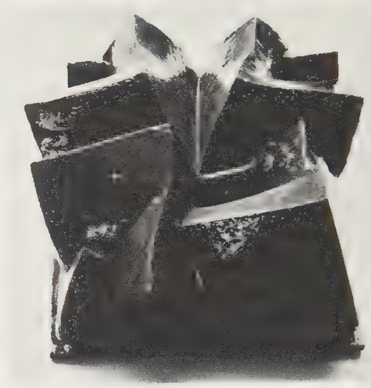


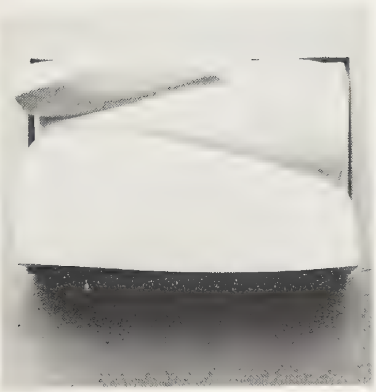


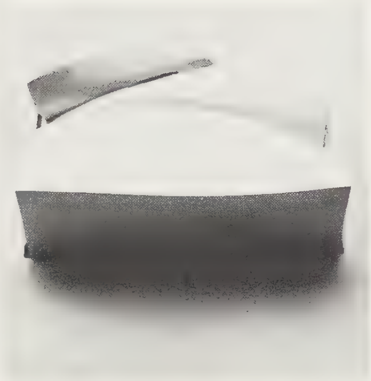


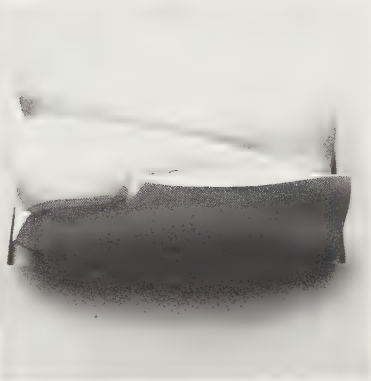
In these examples the original character of the foam rubber is completely neutralized. The dimensional, rhythmic organization of the volumes dominates. The different abstracted translations vary in surface structure. The light produces various effects on the colored polyester coverings.

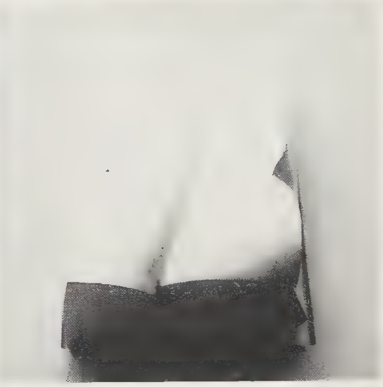


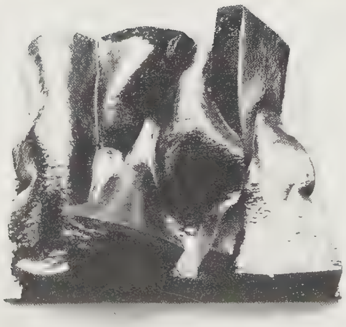


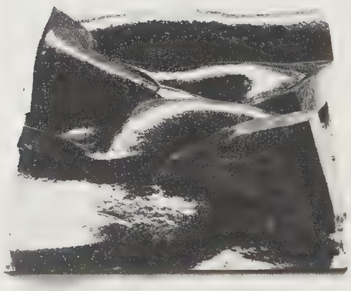


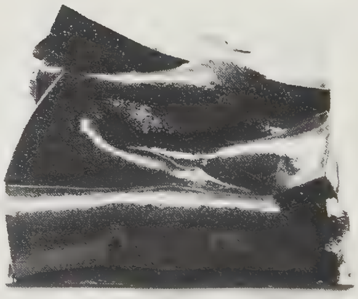


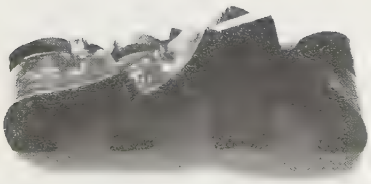


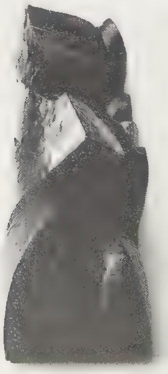




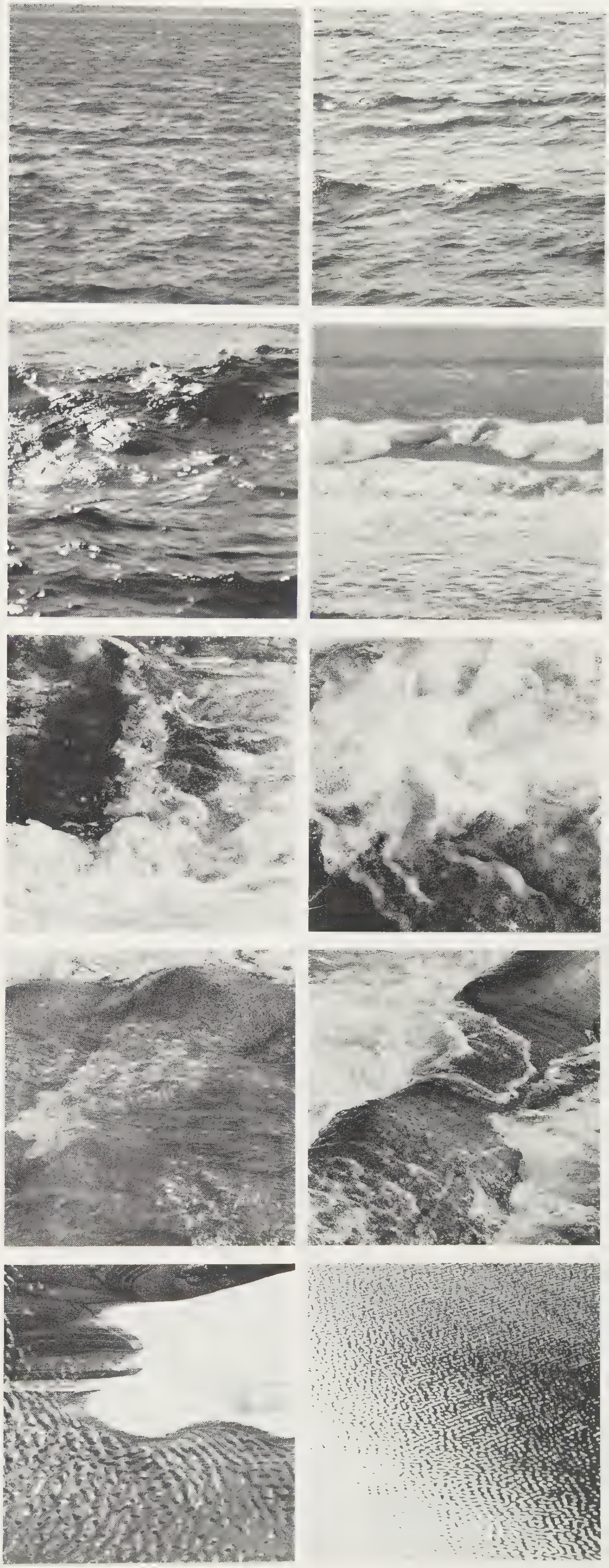






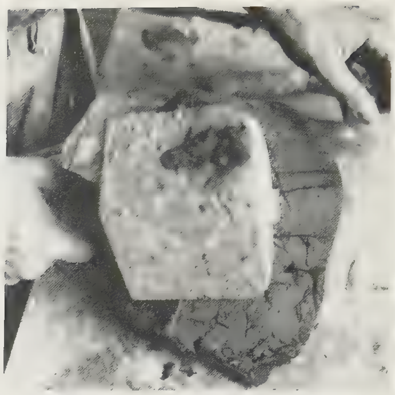


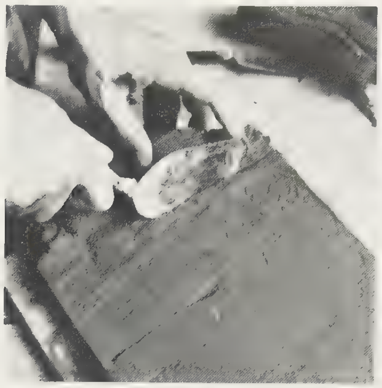
As creative motivation, the behavior of water masses under the effects of forces such as wind pressure, impact, and displacement is analyzed in the following observation and perception studies. The discovered volumetric appearance is abstracted into clay through modeling. The formal elements are developed in many trials and arranged into a composition that expresses the rhythmic, energetic play of water. The actual forms should not lose their character in the composition. The elasticity of clay and the use of the application technique allow interesting differentiated modulations of volumes and surfaces. The definite structure produced can be fired or translated into other materials such as cement, artificial stone, or by casting metal. The construction of the negative, the casting process, the releasing of the form, and the suitable techniques and materials reveal new creative possibilities and experiences. Producing the plaster negative for cement or artificial stone is simple, but constructing a heatproof negative for casting with metal requires considerable skill.

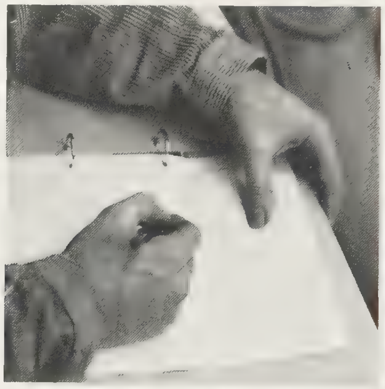


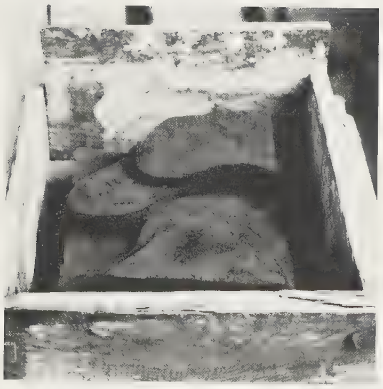
The following photographs show examples of different volumetric appearances achieved from water studies.

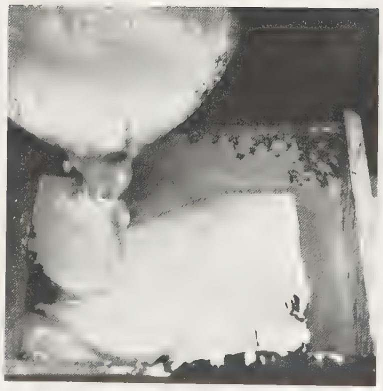
The photographs in the three rows above show, from left to right, the development of modeled elements into a dimensional composition and the possible differentiation of the surfaces. The construction of a negative for casting into cement, artificial stone, or metal; the casting process; and the release of the form are represented in the two lower rows. The illustration below left shows how negative duplicates can be produced with a silicone positive.

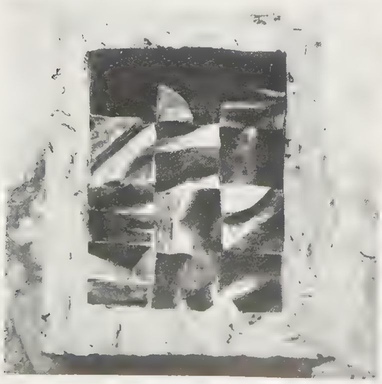


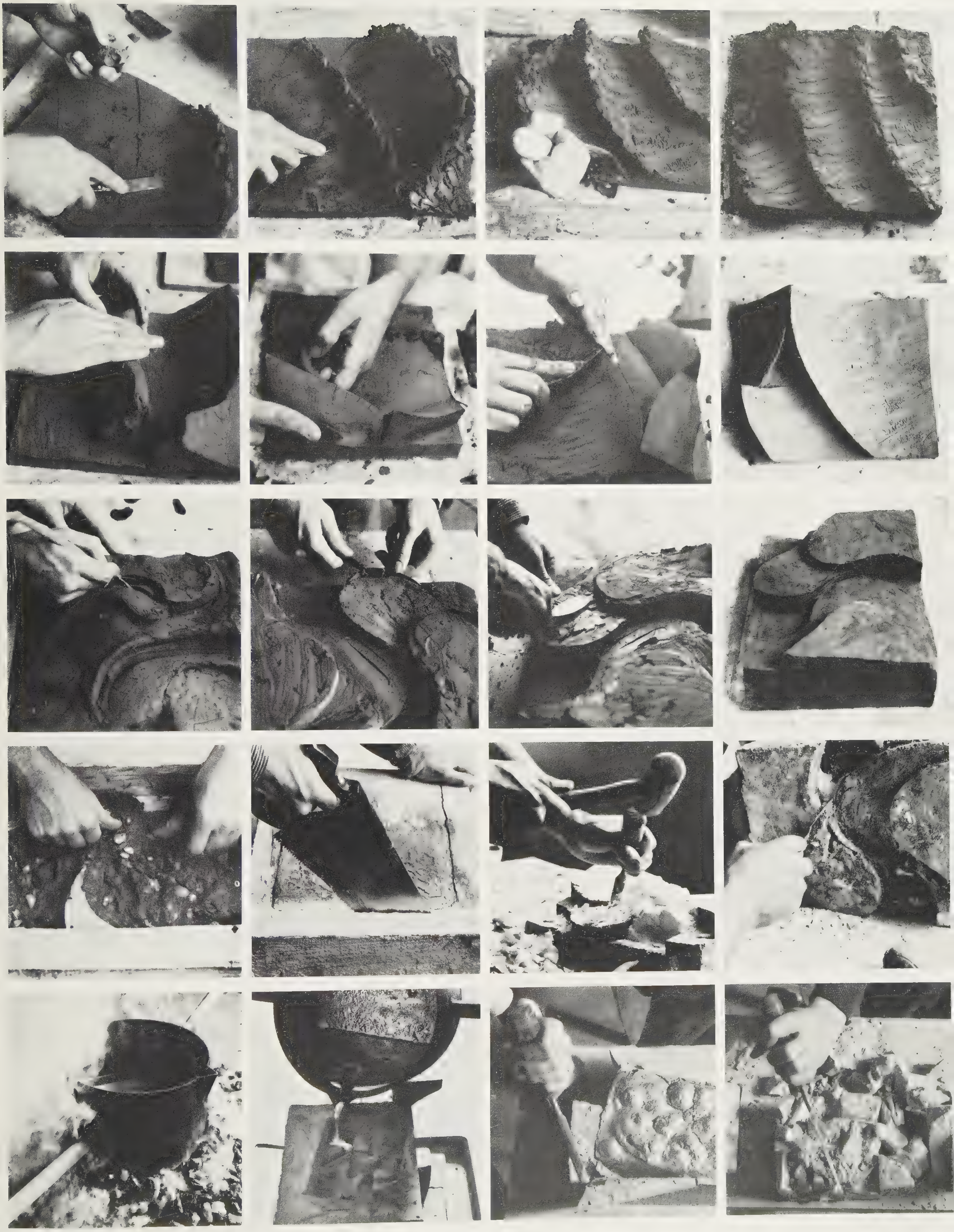


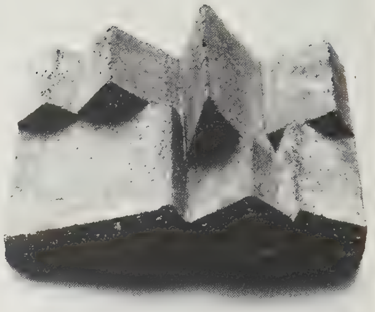




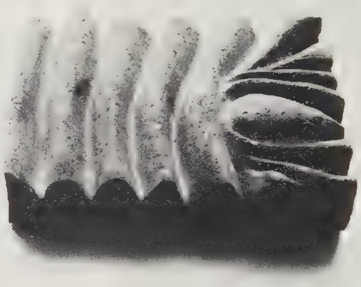


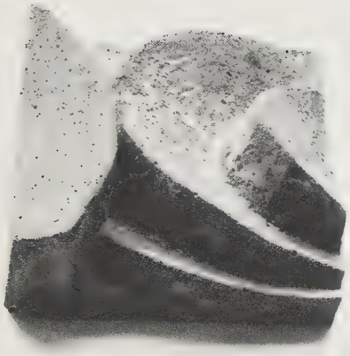


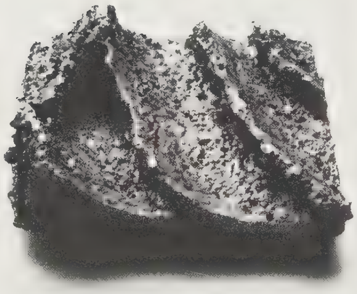


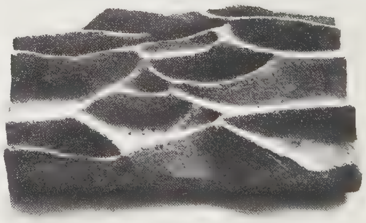


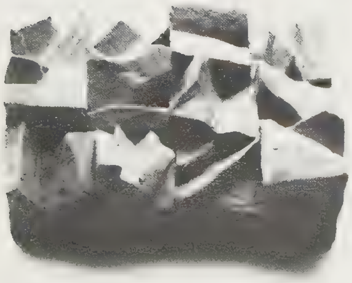
These rhythmic examples of different form elements document many creative possibilities of interpretation, abstraction, and expression. The three photographs below show the same piece translated into artificial stone, cement, and metal.

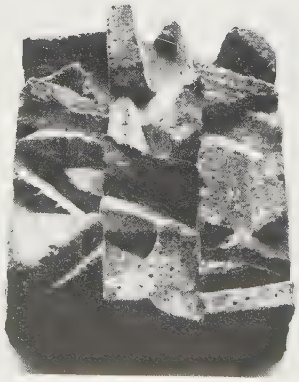


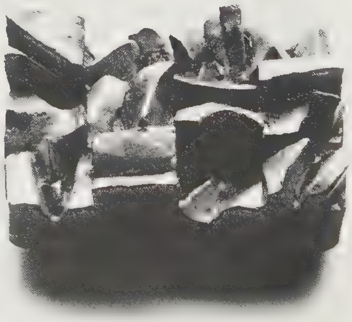


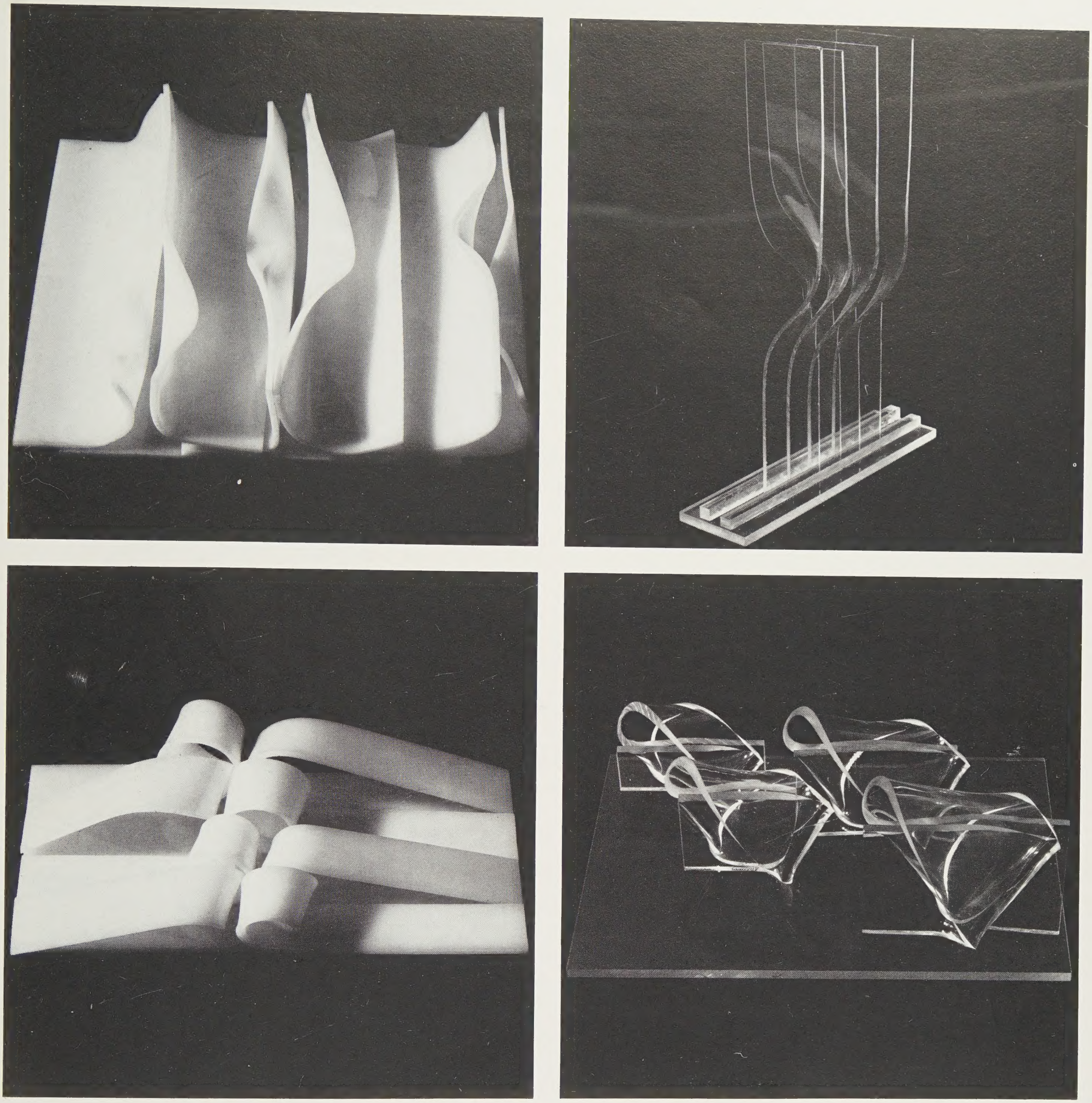




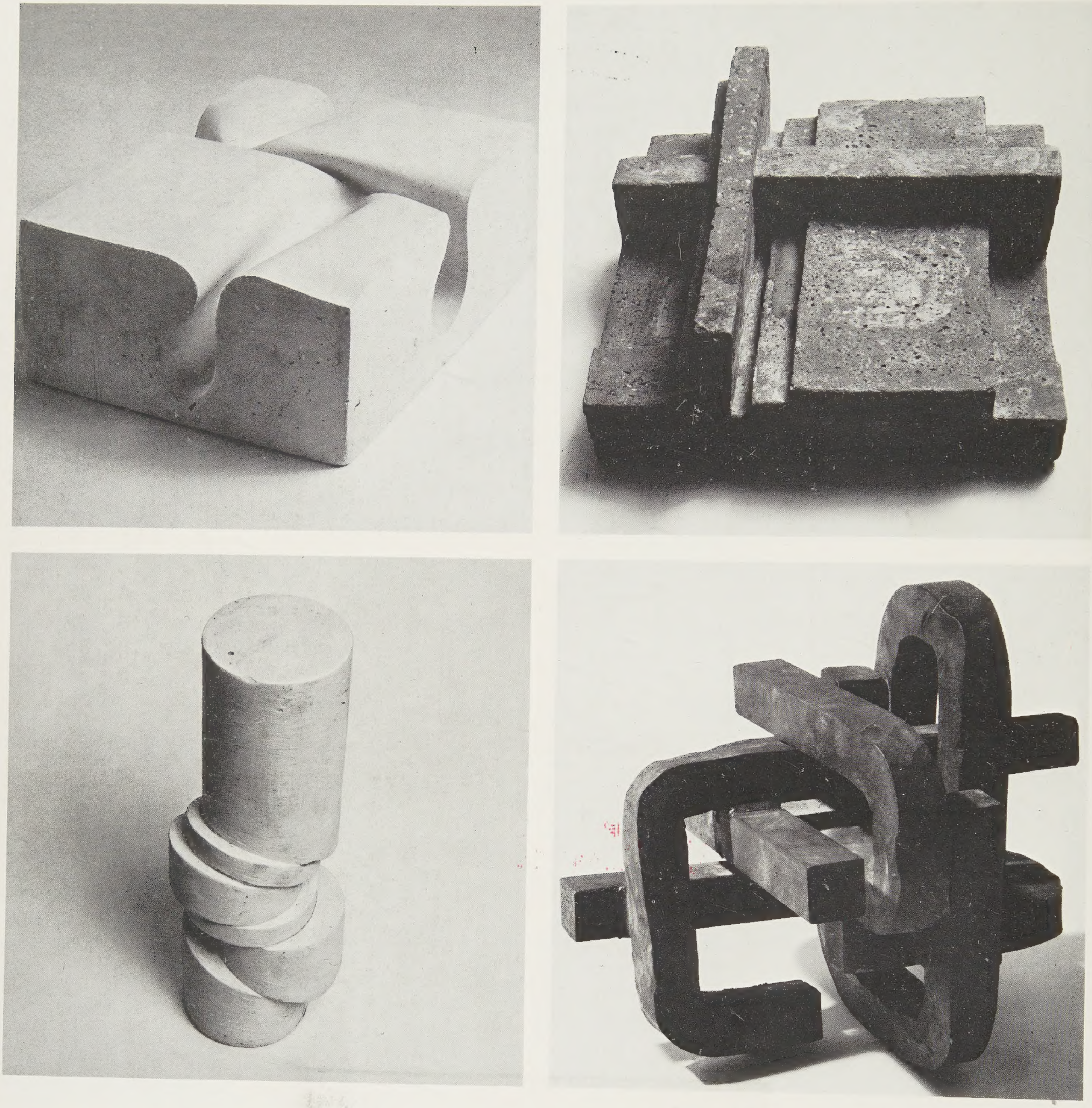








These four examples are from an exercise in which opaque or transparent plexiglass elements are deformed through heating and tension, pressure, or tortion. They are organized rhythmically into simple compositions.



In the four photographs the results of different exercises clarify the relationship between elementary dimensional appearances and creative organization of volumes: above left, plaster cast of a deformed rubber mat; below left, a rhythmic plaster cylinder formed by sawing and shifting the pieces; above right, cement casting of a clay model with a horizontal-vertical composition; below right, dimensionally intersecting elements of hammered iron.

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The Foundation Program at the School of Design in Basel, Switzerland is a fundamental education in art and design. It offers a number of interrelated, equally important courses. Subjects include drawing, color, three-dimensional studies, materials and tools, and exercises in form, aesthetics, and concepts, all of which are designed to promote optical and tactical sensitivity, formal perception, manual dexterity, and a clear understanding of creative processes and to clarify the students' individual talents. The program enables them to choose future professional training in graphic design, photography, typography, display design, goldsmithery, pottery, fine art, sculpture, and other related fields.

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Most of the faculty members are also professionals in their field, certified specialists who are active in visual, creative areas. Throughout the entire program, the teachers are available for individual or group consultation, which ensures that every student has an equal opportunity for a successful training. The teaching-learning process varies with each course. It can progress in several directions: linear, from simple to difficult principles; punctual, a collection of experiences derived from individual assignments; or complex, an analysis of variation sequences as an insight into the creative process.

The current standards of the program are outlined in this series, and the working procedure is explained clearly and understandably in chronological sequence. In order to clarify the interrelationships among the courses, they are categorized according to the teaching-learning process involved. The entire visual-creative program is presented in four volumes, each of which is a complete unit in itself and provides an introduction, course descriptions, and detailed illustrations.

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